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Division of Agricultural Sciences
UNIVERSITY OF CALIFORNIA

SANTA MARIA VALLEY AND ADJACENT AREA VEGETABLE FARMS

I. Organization, Inputs, and Costs

Trimble R. Hedges

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Mimeographed Report No. 167

June 1954

Santa Maria Valley and Adjacent Area Vegetable Farms
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FOREWORD

This report presents findings on farm organization, resources and physical inputs, and costs per acre in producing vegetables in the Santa Maria Valley and adjacent areas. The basic farm organization data relate to the three-year period, 1947-1949. The analysis includes prices for both this period and the three years, 1950-1952. This information results from another in the group of Giannini Foundation farm management investigations. Previous reports have dealt with cotton-potato farm organization in northern Kern County.[1/] An additional study, nearing completion, examines problems in Sacramento Valley rice farming.

The information contained herein is intended for use by people concerned with the business of vegetable farming. Farm advisors, agricultural teachers, farm appraisers, and credit personnel and agencies serving farmers, as well as actual farmers, should find the data useful. This report emphasizes farm organization and costs in producing broccoli, carrots, cauliflower, and lettuce. Similar data, also, are included for more important rotation crops--potatoes, small white beans, sugar beets, and tomatoes. Two succeeding reports will deal with physical inputs and costs and returns relationships.

Annual vegetable crop production is highly important in California. Large quantities of lettuce, broccoli, cauliflower, carrots, and celery are produced for both the California and eastern markets. The Santa Maria Valley and adjacent areas is a locality where such commercial production is important. It was selected for this study because of the variety of crops produced and for the reason that individual or partnership operations predominate. The investigation was planned to deal with smaller vegetable farms and to avoid the complications involved when one organization both grows and ships vegetables.

1/ McCorkle, C. O., Jr., and T. R. Hedges. Northern Kern County Cotton-Potato Farms, No. 1, Organization, Inputs, and Costs. Berkeley, 1952. (Calif. Univ. Col. of Agr., Calif. Agr. Exp. Sta., Giannini Foundation of Agricultural Economics. Mimeographed Report 137). Also, McCorkle, C. O., Jr. Northern Kern County Cotton-Potato Farms, No. 2, Costs, Returns, and Scale of Operations. Berkeley, 1953. (Calif. Univ. Col. of Agr., Calif. Agr. Exp. Sta., Giannini Foundation of Agricultural Economics. Mimeographed Report 143)

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Santa Maria Valley and Adjacent Area Vegetable Farms
I. Organization, Inputs, and Costs[2/]

Trimble R. Hedges[3/]

Summary

The Farms Are in Two Subareas Near Santa Maria

The farm organization and cost information presented here is based upon interviews with 42 vegetable growers in the vicinity of Santa Maria, California. Twenty-two of these growers were located on predominantly Yolo soils south of the Santa Maria river bed between Santa Maria and Guadalupe. The following discussion refers to these farms as in Subarea I. Subarea II includes the remaining 20 farms north of the Santa Maria river course, and in other fringe portions of the Santa Maria Valley, and in the Lompoc, Arroyo Grande, and other nearby localities. Interviewers also contacted local shippers, farm suppliers, and appropriate officials to get supplemental data on inputs and costs. All calculations are based on price levels prevailing from 1947-1949 and 1950-1952 for lettuce, carrots, broccoli, and cauliflower as well as for the principal rotation crops in the areas studied.

There was considerable double cropping on farms of all sizes in both subareas. Vegetables occupied more than half of the cultivated land on all farm sizes but tended to be more important in Subarea I and to occupy relatively less of the crop acreage as the size of farm increased in Subarea II.

- -

2/ This report is the first of a series based on detailed investigations of farm organization, practices, and costs in the Santa Maria Valley and adjacent areas. It includes findings on methods and costs in growing vegetables.

3/ Associate Professor of Agricultural Economics, Associate Agricultural Economist in the Experiment Station and on the Giannini Foundation, University of California, Davis.

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Harvesting and Local Marketing Costs Exceeded Growing Costs

The following data indicate costs per crate at 1950-1952 prices for a typical 220-crop-acre vegetable farm in Subarea I:

	Spring lettuce	Summer or fall lettuce	Carrots	Broccoli	Cauli-flower
	dollars per crate				
Producing	1.14	.92	.77	1.33	.55
Harvesting and marketing	1.22	1.22	1.99	1.78	.85
Total	2.36	2.14	2.76	3.11	1.40

Calculations include both production items and the expenses of harvesting and marketing at 1950-1952 prices. They reflect the most typical operations and methods on a 220-crop-acre vegetable farm on better soils. Harvesting and packing accounted for the following percentages of the total cost according to crops: spring lettuce--52 per cent, summer or fall lettuce and broccoli--57 per cent, carrots--72 per cent, and cauliflower--61 per cent. Total production, harvesting, and packing costs per acre ranged from $397 for spring lettuce to $766 for carrots (Table 21, page 48 for details).

Production Costs Vary Widely Among Typical Farm Organizations and Individual Farmers

The costs indicated above are termed "typical" for the 220-crop-acre vegetable farms because they are based on the most common practices and methods. Actually, individual farmers on these farms did various jobs by different methods and varied in their efficiency. They, therefore, had different costs from each other or from this "typical" figure shown here. Typical costs on 340- and 500-crop-acre farms in Subarea I varied from the 220-crop-acre farm cited above. So, too, did costs vary for the individual growers within each group. Growers on the 150-, 220-, and 320-crop-acre farms in Subarea I showed the same cost relationships. There is no

Harvesting and Land Preparation Costs Assumed Growing Costs

The following data relate costs per crop of 1950-acre patches for a typical 250-crop-acre vegetable farm in Subarea I:

	Planting Lettuce	Planting to Cull Lettuce	Carrots	Broccoli	Cauli-flower
	Outlays per crop				
Marketing	1.14	.42	.17	1.12	.18
Harvesting and marketing	1.72	1.52	1.07	1.72	.31
Total	2.36	2.14	1.24	2.13	1.10

Subsidiary inside bolt production items not the expense of harvesting and marketing of 1950-1952 prices. They reduced the cash outlays involved in a 250-crop-acre vegetable farm on basin soils. Harvesting and packing associated for the following percentages of the total cash operating in crops: lettuce--25 per cent, and cauliflower--21 per cent. Total production, harvesting and packing costs per acre ranged from $197 for spring lettuce to $254 for autumn (Table 21, page 15 for details).

Productive Costs They Differ Among Typical Farm Organizations and Individual Farmers

The costs indicated above are termed "typical" for the 250-crop-acre vegetable farms because they are based on the most common practices and systems. Actually, individual farmers on these farms did various jobs by different methods and varied in their efficiency. They, therefore, had different costs than were given in the "typical" figure above here. Typical costs on 250- and 500-crop-acre farms in Subarea I varied from the 250-crop-acre farm cited above. In, how, did costs vary for the individual farmers within each group. Grouped on the 150-, 250-, and 350-crop-acre farms in Subarea I showed the same cost relationships. There is no

"cost" of growing vegetables; the costs vary widely according to the size of farm, the kind and amounts of crops grown, and the cost of the labor, power, irrigation, and other services used in growing them.

Power, Irrigation, and Equipment Are Important in Explaining Production Cost Variations

The costs of power, equipment, and irrigation were important in total production costs. Tractor costs varied from $0.93-$1.08 per hour for a two-bottom general purpose unit in Subarea I; from $1.18-$1.73 per hour for the same equipment in Subarea II. Costs for the four-bottom, track-laying tractor varied from $1.47-$1.79 per hour in Subarea I and from $2.19-$2.73 per hour in Subarea II. Cost per hour for wheel tractor power decreased in both subareas as the size of farm increased. This was not true, however, for the larger power unit. Farmers were better able to adjust unit capacities to field requirements and, hence, to minimize cost per hour for the wheel tractors than for track layers.

Irrigation is required for summer crop production in the subareas studied; water was an important cost factor in producing vegetables. Cost for water varied from $4.21-$5.58 per acre-foot in Subarea I and from $4.13-$4.91 in Subarea II. There was a tendency toward decreasing cost per acre-foot as size of operations increased in Subarea I, but exactly the opposite relationship held in Subarea II. One of the reasons for classifying the farms according to the two subareas was the less favorable irrigation water supply in Subarea II. Equipment, particularly specialized items such as potato planters and harvesters, also caused cost variations among individual farms and the group typical farms.

Production Costs Were Higher in Subarea II Than in Subarea I

It costs more to produce vegetables in Subarea II than in Subarea I. The crop with the smallest difference, summer lettuce, cost 10 cents per crate less to produce in Subarea I than in Subarea II; carrots, at the other extreme, showed a difference of 36 cents in favor of Subarea I.

a difference of 75 cents in favor of Subarea I.

Rising Prices After 1950 Brought Higher Production and Local Harvesting and Marketing Costs

Both production and harvesting plus marketing costs rose between 1947-1949 and 1950-1952. The amount of the cost increase ranged from 6-14 per cent depending upon the particular crop, the farm size, and the subarea. These figures compare with a 10-per cent rise in the U. S. Department of Agriculture index of prices paid by farmers. Labor, materials, and power were the most important groups of production items responsible for cost rises. Increasing materials prices, especially for containers, largely explained the higher harvesting and marketing costs.

Farm Organization, Inputs, and Costs in Vegetable Production

Interviewers visited 42 vegetable growers near Santa Maria and in other portions of northern Santa Barbara County to collect the data which this report analyzes.4/ Farmers reported their basic organization and production methods in 1948 and 1950. Interviewers obtained supplementary farm data in 1953, chiefly on changes in farming methods. Additional information on soils, climatological, and biological factors came from official reports. Local dealers, shippers, and other agencies serving vegetable growers provided data on irrigation water, harvesting and marketing practices, and prices of various input materials and services. They furnished input price data for 1948, 1950, and 1953. This price information indicates a general rise in costs after 1950. The analysis of input costs, therefore, uses two sets of prices. One set, based on 1948 interviews, reflects the price situation during the pre-Korean period, 1947-1949. The second set, collected in 1950 and 1953, represents the post-Korean period, 1950-1952. The subsequent report on costs and returns, also, will use prices for these two periods.

4/ Names of interviewees were drawn at random from the 1948 list of members included in the marketing order for dry-pack lettuce.

Electric Power Sales into Foreign Markets and Local Generating and Distribution Plants

Most projections are increasing plus excluding energy sales between 1947-1951 and 1951-1955. The maximum of the most increases ranges from 4-1/2 for rural companies which are particularly very, the five rural and the minimum. Three Pigeon Lumpkin with a Simpson Lumber also in Cow C. C. Development of Agricultural Index of Private Yield by Industry. Labor, materials, and power costs that have increased figures of investment income particularly for small plants. Increasing municipal systems, especially for communities initially experienced the income increasing and accounting costs.

Plant Requirements, Service, and Costs in Electric Production

Interconnecting existing of municipal companies that Florida Electric and is subsidiaries of Southern Light Company to maintain the data which supply industry.[1] Thereon provided local public corporation and distribution between in 1949 and 1950. Interchange charged negligently Pine Lake or 1951, already to changed to Tuesday without. Additional information of solid, discontinuities and river-caused Electric rows Pine filtrate research. Local Electric, engineers and other agencies existing expansion process provided data on litigation water, metering and embedding generation, and values of various flood materials and industrial. They distribute total peak-hour for 1950, 1955, and 1971. Old prime industrial condition a planned site is route after 1951. The beneficial rate, thereafter, case two ends of prices. One and, based on 1952 Interchange relocate the prime relocation during the pre-census period 1951-1952. The second and, multiplied to 1951 and 1953, experiences the pre-Pigeon period, 1953-1955. The maximum factor is made and rotated also will use prices for taken by policies.

---

[1] Power of Interconnecting were always by reason plus the 1951 list of members interest in the underlying cases for disposal interest.

Natural Determinants

Two groups of natural factors are important in regulating the farming pattern and production practices in the Santa Maria and adjacent truck crop areas. Soils are of major importance; one of the reasons for vegetable production concentrating in Santa Maria Valley and adjacent valleys is that soils are fertile. Climatological factors, particularly temperature, and the timing of precipitation, also, are highly important. These factors favor good yields of quality vegetables.

Soils.--Most of the farmers interviewed operated in the Santa Maria Valley either north or south of the Santa Maria River and, for the most part, in the area between Santa Maria and Guadalupe. Soils in this general area are among those more favorable for vegetable production. The Yolo series predominates, and, in addition, there are several sandy phases of Oakley soils. The Yolo series, particularly silt loam, sandy loam, and fine sandy loam, is found south of the Santa Maria River. Yields are higher here and vegetable growing is more intensive in this district; this is henceforth designated Subarea I. The area north of the Santa Maria River includes fine sand and fine sandy loam of the Yolo series plus Oakley sand. This district, plus outlying vegetable-growing districts near Arroyo Grande, Lompoc, Oceano, and San Luis Obispo, constitutes Subarea II. As between the two segments of the Santa Maria Valley, potatoes and small white edible beans tend to occur more frequently north of the River. The area to the south tends to emphasize lettuce, broccoli, and cauliflower, with some carrots. Some celery is grown, particularly at certain times of the year and during certain seasons on both sides of the River, usually in the heavier soils. Oceano, outside of the Santa Maria Valley, is an important celery shipping point.

Precipitation.--Average annual rainfall at Santa Maria is 14.2 inches of which more than 12½ inches falls during the period, November through April (Figure I, Table 1). The results are that all summer crops depend upon irrigation, and there is little or no natural precipitation to interfere with harvesting or

Climate Considerations

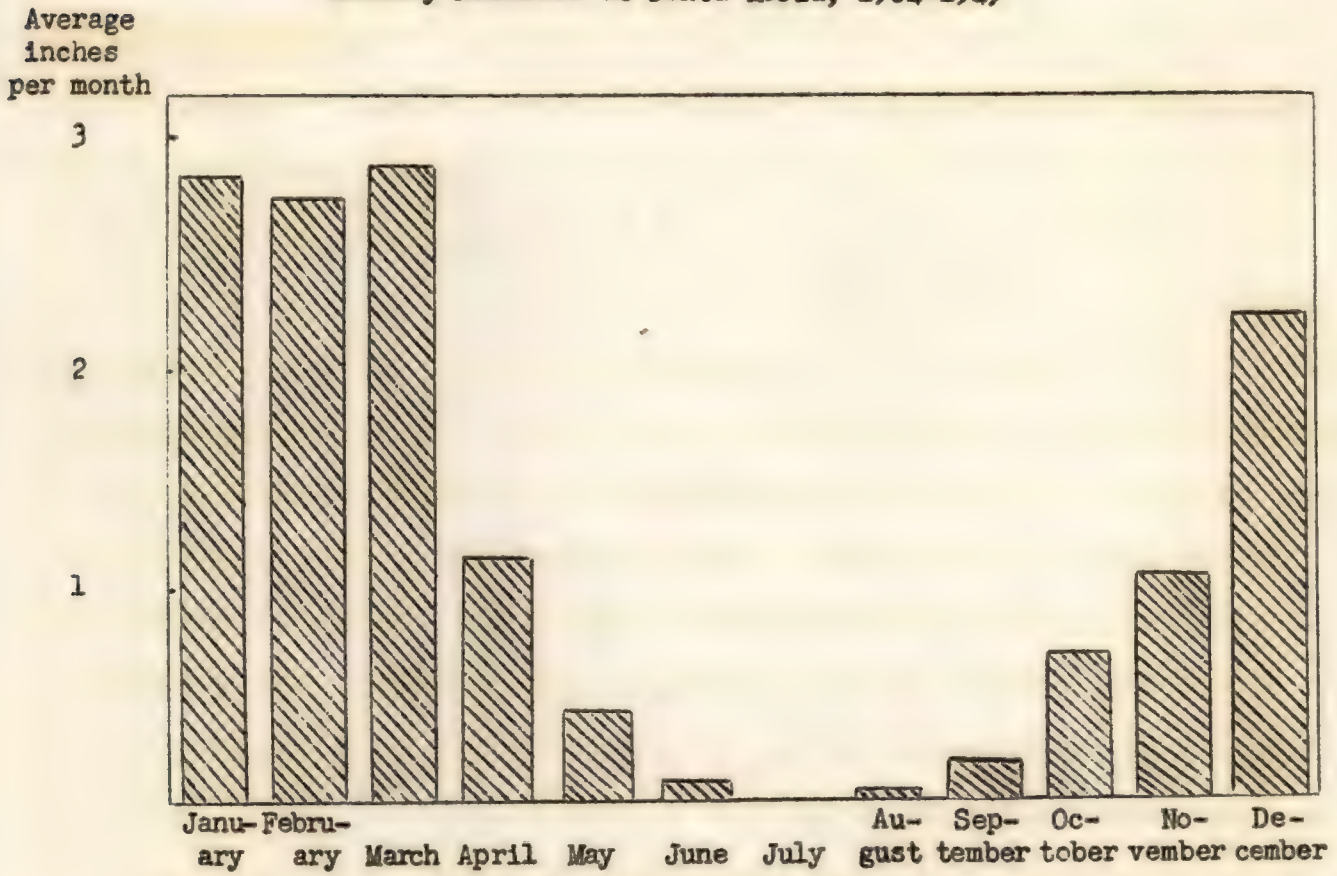
The groups of natural factors are important in regulating the floating pattern and productive properties in the Santa Maria and adjacent bays and marshes. Chief among these are of major importance. One of the reasons for unfavorable productive conditions in Santa Maria Valley was attributed entirely to poor soils or drainage. Climatological factors, particularly temperature, are the cause of investigation, also, are highly important. These factors have played a quality vegetative

Effect--Effect of the farmers interviewed speculated in the Santa Maria Valley crease month or month of the Santa Maria Bays and, for the most part, in the area between Santa Maria and Guadalupe. Soils in this general area are among those very favorable for vegetable production. The four having predominately, is available, these are because small plants of heavy soils. The fill materials, particularly silt loam, sand like sandy loam, in flood basin of the Santa Maria River. Yields are higher here and vegetable growing is more intensive in this district. This is accompanied Chapter 3. The area north of the Santa Maria River mainly Sand and fine sandy loam at the surface with fine sandy sand. This district, like bordering vegetable-growing districts over sandy Oceano, Guadalupe, and San Luis Obispo, accumulate fairness in between the two extremes of the Santa Maria Valley, richness and small white beans tend to occur more frequently north of the River. The area to the west tends to accurate harvest, harvest, and quality, with some exceptions where primary is given, particularly at certain times of the year but during winter seasons the best wishes of the farm, usually in the harvest fall. Summer winter of the Santa Maria Valley, it is important every adjoining point.

Precipitation--Average annual rainfall in Santa Maria is 13.7 inches of which more than 1/2 inches during spring the period, December through April (Table 1, Page 4). The results are more but warmer enough depend upon irrigation, and there is little or no defined precipitation in September-the harvesting

FIGURE I

Monthly Rainfall at Santa Maria, 1904-1949



(Heaviest rainfall is during November through April during which period over 12.5 inches of the annual average, 14.2 inches, is received. Insignificant amounts occur during June through September.)

TABLE 1

Monthly and Seasonal Rainfall at Santa Maria, 1904-1949

Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
	Average precipitation												
1945	.61	2.87	3.27	.11	.04	.11	0	.02	T	.53	.88	3.11	11.55
1946	.50	1.63	4.13	.20	.10	0	0	0	T	.24	3.71	1.98	12.49
1947	.35	1.10	1.27	1.28	.30	.13	0	T	.06	.58	.04	.29	5.40
1948	.06	1.29	3.21	1.89	.81	.03	T	T	T	.11	.03	2.99	10.42
1949	1.28	1.44	3.12	.07	.77	T	T	T	0	.03	.71	2.78	10.20
1904 to 1949	2.58	2.70	2.89	1.09	.42	.09	T	.03	.19	.67	1.04	2.20	14.17

Source: For Figure 1 and Table 1: United States Weather Bureau. Climatological Data, California Section.

cultural operations. Irrigation is difficult and expensive during certain years, disregarding price changes, due to shortage of water and low pumping levels. The irrigation data are based on conditions in 1948 when the growers were interviewed. No attempt is made in this study to analyze problems arising from varying water tables.

Temperature.--This factor is remarkably stable in the Santa Maria Valley. The average annual range between the average daily maximum and the average daily minimum is only 23°; 70° is the high and 47° is the low (Figure II, Table 2). The most typical range by months is also 23°, but it narrows to 22° for August and widens to 27° for November. The absolute maximi by months range from 109° recorded for one or more Junes to 85° for one or more Januarys in a 29-year period of record. The absolute minimi by months ranged from 24° in one or more Januarys and Novembers to 41° in one or more Julys in 29 years. Six times during the 10-year period, 1940-1949, September and October temperatures exceeded 90°. Temperatures dropped below 30° only five times during the 10 years. January was the lowest temperature month.

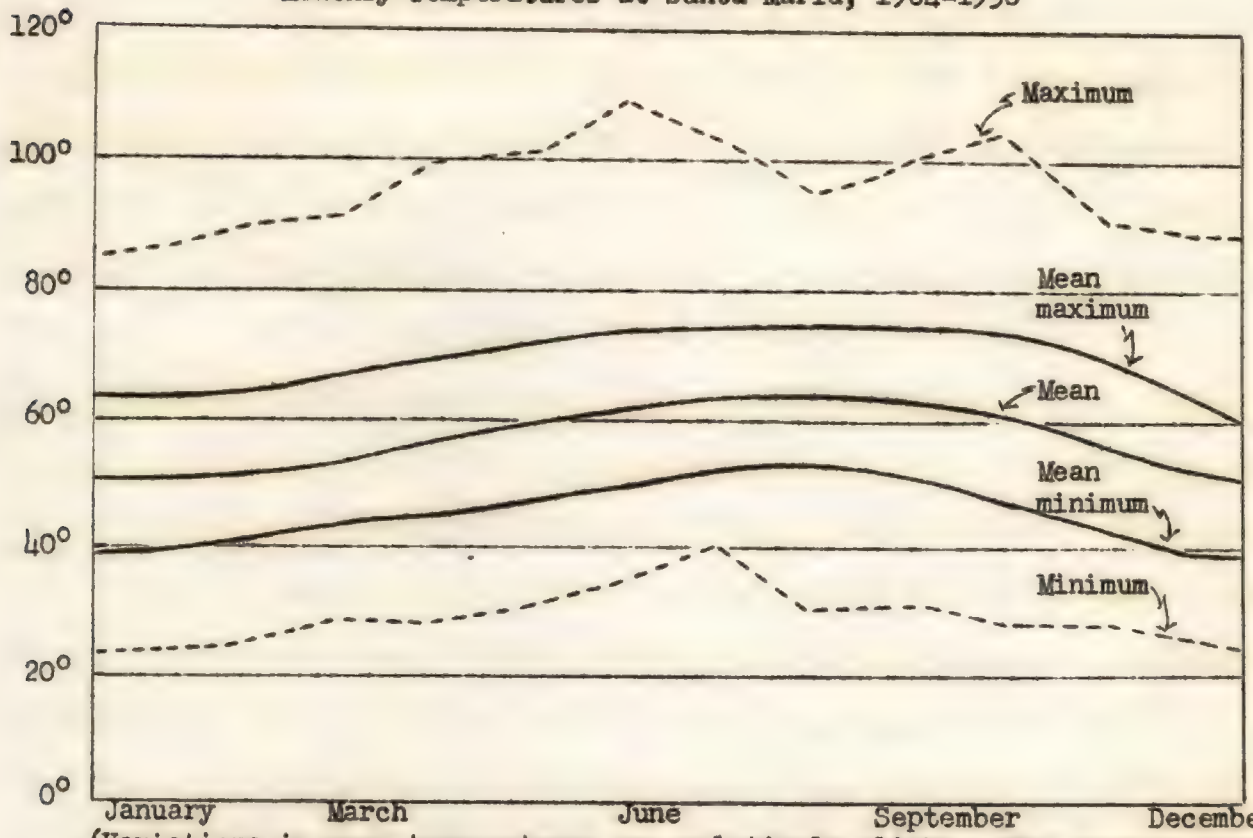
Other Climatological Factors.--Fog from the Pacific Ocean cools the atmosphere in the study area. This factor maintains the temperature condition permitting using the vegetable-producing potential of the soils. In general, this factor is most favorable near the Ocean. Some of the fringe vegetable-growing districts more distant from the coast had less of this cooling influence.

Biological Determinants

The soil survey report cites salt grass and wild morning glory as weed pests in the Santa Maria area. Both are subject to control by soil management and chemical herbicides, respectively. Bean farmers have found nightshade a nuisance during recent years. Hand-weeding of this pest can be prohibitively costly.

FIGURE II

Monthly Temperatures at Santa Maria, 1904-1930



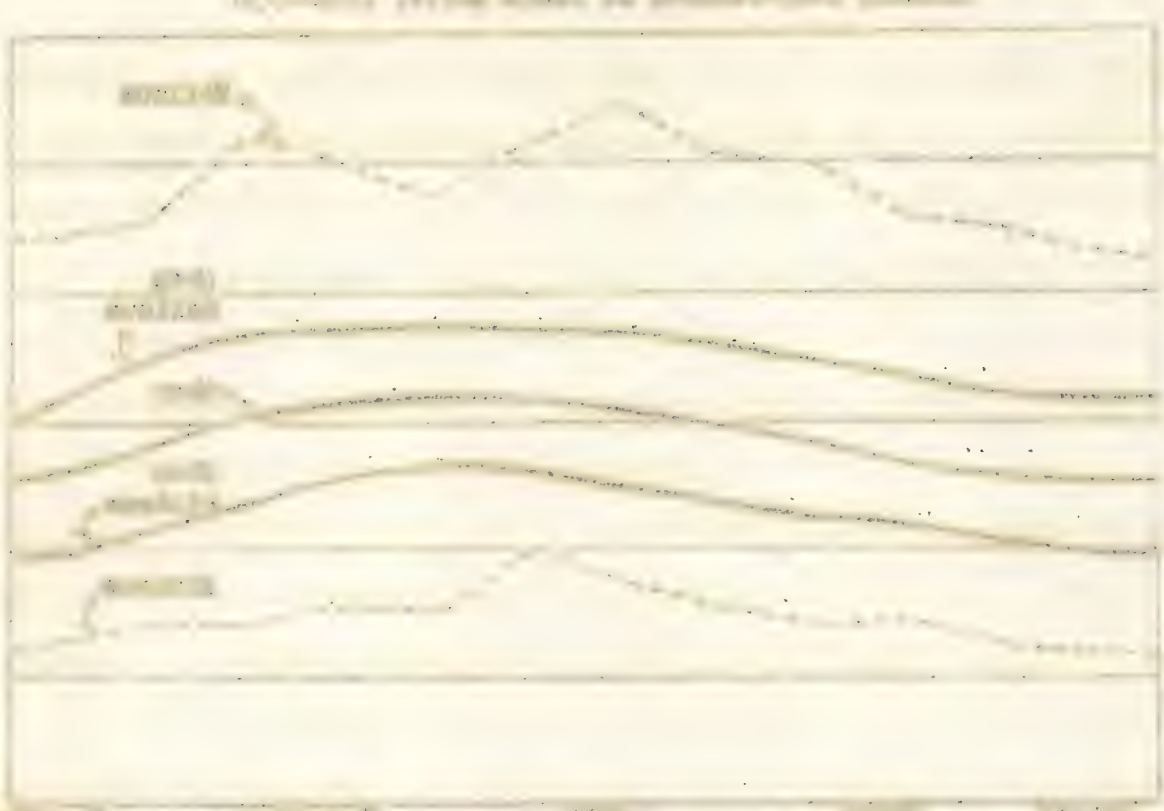
(Variations in mean temperatures are relatively slight. The average range between the mean minimum and mean maximum is 23°. Mean maximum temperatures vary from 64° in January to 75° in September, while mean minimum temperatures vary from 39° in January to 53° in August.)

TABLE 2

Monthly Temperatures at Santa Maria: Mean Maximum and Mean Minimum; Absolute Maximum, Absolute Minimum, and Frequency of Occurrence (1°), 1904-1949

	Item						
	Mean			Absolute		Extreme temperature, 1940-1949	
	Daily	Maximum	Minimum	High	Low	Above 90°	Below 30°
	Average temperature					Number of years	
Years	38	27	27	29	29	10	10
January	50	64	39	85	24	0	5
February	51	64	41	89	25	0	2
March	53	66	43	91	29	0	0
April	56	68	45	98	28	3	0
May	59	70	47	101	32	3	0
June	62	73	50	109	35	1	0
July	64	75	52	103	41	0	0
August	64	75	53	95	31	1	0
September	63	75	51	100	32	6	0
October	61	74	48	104	29	6	0
November	57	70	43	92	24	1	0
December	53	65	40	89	26	0	4
Annual	58	70	47	109	24	10	5

Sources: Average temperature from United States Weather Bureau. Summary of Climatological Data for the United States. Section 17, 1930. Number of years from Climatological Data, California Section.



Wireworms and aphids are two lettuce pests against which specific measures are necessary. Soil fumigation is effective against wireworms, while chemical insecticides commonly are applied, usually by air, to control aphids. Combined dusts are used permitting caterpillar control in the same operation.

Wireworms also attack carrots. The treatment is the same as for lettuce. Usually, these crops are grown in rotation, and the same soil fumigation is effective for both crops for one to two or three years. The vegetable weevil, also, is a carrot pest. Dusting with chemical insecticides is effective as a control.

The two cruciferous crops, broccoli and cauliflower, are attacked by a wide range of aphids and caterpillars. Usually, farmers dust these crops repeatedly--sometimes up to five or six times--with chemical insecticides.

Insect pests of sugar beets include aphids, leaf hoppers, nematodes, and wireworms. Rotations usually are the chief reliance in minimizing nematode damage. Dusting is effective to control the other insects.

Small white beans are attacked by two-spotted mites and bean aphids. Dusting is the usual control measure.

Insect enemies of the potato include potato aphids, potato flea beetles, and sometimes wireworms. Dusting is standard practice in controlling the aphids and beetles. Wireworm control, where required, is by soil fumigation.

Tomatoes are attacked by a wide range of insects--tomato mites, aphids, various caterpillars, and various others less commonly causing serious damage. Dusting with chemical insecticides is standard treatment for this crop.

It is evident that insect enemies are sufficiently important to cause serious losses to Santa Maria vegetable farmers if uncontrolled. The various means of control add appreciably to production costs. Dusting is the cheapest method of destroying insect pests where effective. Soil fumigation is relatively expensive, as is rotation practice, when the alternative crops are less profitable than the crop for which a pest is being controlled by rotation.

TABLE 3

Acres in Farms for 42 Vegetable Farms in the Santa Maria and Adjacent Truck Crop Areas, 1948

Size Group	No. of Farms
Subarea I (South of Santa Maria River)	
0 - 159.9	11
160 - 319.9	5
320 - 479.9	6
Subarea II (North of Santa Maria River plus Outlying Sections)	
0 - 119.9	6
120 - 239.9	5
240 - 359.9	6
360 - 479.9	3

TABLE 3

Acres in Farms for 52 Vegetable Farms in the Detroit Area and Adjacent Truck Crop Areas, 1949

Size Group	No. of Farms

Vegetable Farm Organization

Sample farms are classified in two groups for the purpose of this report. The 22 located south of the Santa Maria River and, for the most part, between Santa Maria and Guadalupe, henceforth, are identified as Subarea I farms. Subarea II includes the remaining 20 located in the Santa Maria Valley north of the River and in the outlying valleys previously mentioned. Most were in the northern side of the Santa Maria Valley.

Total Acres in Farms.--The vegetable farms included in this study and, in general, in the area studied are family-type operations. Subarea I included 11 farms whose total acreage was within the 0-159.9-acre range. The remainder was divided--five within the range of 160-319.9 acres and six larger farms ranging from 320-479.9 acres (Table 3). Farms in Subarea II were somewhat more dispersed among the various total acre size groups. They are subclassed initially in four groups rather than the three used for Subarea I. The smallest size, 0-119.9 total acres, included six or about one third. The next two groups included five and six farms, respectively, and there were three in the 360-479.9-acre range (Table 3). This last group was not analyzed in the study.

Crop Organization and Land Use.--Double cropping is typical on the Santa Maria vegetable farms studied. All size groups in Subarea I reported more acres in vegetables than total acres in the farm (Table 4). Only the larger farms, with 100 acres of sugar beets, included any important amount of crops other than truck crops. The 0-159.9-acre farms had 223 acres in vegetables, including tomatoes; the 160-319.9-acre farms had 340 acres in vegetables; and the 320-479.9 acre farms had 504 acres of which 100 acres was in sugar beets (Table 4).

The cropping pattern for the Subarea II farms reflects the wider range in soil conditions and greater difficulty in supplying adequate irrigation water as compared with Subarea I. The four size groups previously identified were further condensed into three groups for convenience in analysis (Tables 3 and 5).

TABLE 4

Typical Crop Organization and Land Use for 21 Vegetable Farms in Subarea I; Santa Maria and Adjacent Truck Crop Areas, 1948

	Size groups		
	0-159.9 acres	160-319.9 acres	320-479.9 acres
1	2	3	4
No. of farms	11	5	6
Land Use:			
Vegetable crops:			
Lettuce (Spring)	34	50	57
Lettuce (Summer)	45	104	116
Carrots	31	18	40
Broccoli	27	54	64
Cauliflower	47	114	127
Total vegetable crops	184	340	404
Other crops:			
Sugar beets			100
Tomatoes	39		
Total intertilled	39		100
Total all other crops	39		100
Total acres of crops	223	340	504
Acres double cropped	93	150	200
Net acres of cropland	130	190	304
Farmstead, other non-crop land	12	14	20
Total land in farm	142	204	324

TABLE 5

Typical Crop Organization and Land Use for 20 Vegetable Farms in Subarea II; Santa Maria and Adjacent Truck Crop Areas, 1948

	Size groups		
	0-119.9 acres	120-239.9 acres	240-359.9 acres
1	2	3	4
No. of farms	6	5	9
Land Use:			
Vegetable crops:			
Lettuce (Spring)	25	14	28
Lettuce (Summer)	25	10	44
Lettuce (Fall)			25
Carrots			17
Broccoli	16	38	28
Cauliflower	16	70	47
Total vegetable crops	82	132	189
Other crops:			
Beans	23	45	132
Potatoes	47	63	
Total intertilled	70	108	132
Total all other crops	70	108	132
Total acres of crops	152	240	321
Acres double cropped	63	100	81
Net acres of cropland	89	140	240
Farmstead, other non-cropland	10	16	43
Total land in farm	99	156	283

The three farms in the 360-479.9 group had no more vegetables than reported by the smaller farms and, hence, were not a distinct group according to this criterion. Total crop acreage, and particularly vegetable acreage, is smaller relative to acreage in farms for the Subarea II farms than for those in Subarea I. Vegetables occupied an acreage less than total land in farms for all three sizes in Subarea II (Table 5). Other rotation crops, also, were found in each farm organization. This analysis considers beans and potatoes--the most commonly found among these farms. It is more convenient and briefer in referring to these characteristic farm organizations to designate them as 220-, 340-, and 500-crop-acre farms within Subarea I and 150-, 240-, and 320-crop-acre farms within Subarea II. Such terminology is used, therefore, in the remainder of this report.

Economic Determinants

The cost analysis to follow involves two types of economic data: (1) annual cost rates for using durable equipment such as tractors and machinery which are worn out over a period of years and (2) prices for materials such as fertilizer and for services such as soil fumigation. Annual overhead costs reflect farm survey data and price information from implement dealers and others. Both buyers and sellers of the goods and services involved furnished price information.

The analysis in this report examines farm organization and cropping plans, practices, and inputs in 1948. Prices and costs used are those prevailing during the periods, 1948-49 and 1950-1952. There are two definite advantages in calculating costs for both these periods. First, the analysis is meaningful in the current price situation and, second, there is an opportunity to measure the effects of price changes on the operating and production costs. This approach ignores changes in organization or in methods and practices between the two periods. Some important changes in the cropping pattern occurred, but this study does not examine them. Actually, farmers reduced the acreage of carrots, cauliflower, and

tomatoes while increasing broccoli. Some of the rotation crops also increased. The acreage of lettuce on the other hand remained approximately the same. A later report will deal with these organization changes and their economic impacts. There were no major changes in production methods and practices that would affect costs appreciably. Considerable changes occurred, of course, in the kind of materials used for the pest control. These changes have been considered in calculating input costs for the 1950-1952 period.

Annual Overhead Costs and Prices.--Overhead costs in this report include depreciation, interest on investment or the price for the use of money, repairs, taxes, and insurance. No charge for shelter is included; this item was included later in the analysis as one item in "general overhead." Depreciation and interest on investment are related directly to two factors: the length of life of a given piece of equipment and its loss in dollar value during its life. The latter is defined as the original cost less salvage value. This analysis includes calculated costs for the principal items of machinery, field power units, and transportation and irrigation equipment found on farms included in this study.

Farm Machinery and Power Units.--To calculate depreciation it was required to (1) establish a reasonable life for each piece of equipment and (2) divide this figure into the total loss of dollar value during its useful life. The loss in dollar value, in turn, represents original cost less salvage value. It was necessary to calculate depreciation at both 1947-1949 and 1950-1952 prices. Most items of equipment had been purchased during the years, 1946-1948, or just before the interviews were conducted. It is assumed, therefore, that all equipment was new or approximately new. The combined judgment of farmers and dealers in the area is the basis for the estimate of the years of serviceable life for farm equipment used in this analysis.

Annual interest on investment in this analysis represents 5 per cent of the average investment figure, the latter value equals salvage value plus original

cost divided by two (Table 6). The charge for repairs is based on data reported by farmers interviewed and by dealers and is considered to represent typical costs. It is recognized, of course, that wide variations from these costs are found among individual farmers.

Appropriate officials and insurance agencies provided information regarding taxes and insurance. The choice of equipment included was indicated by farmers and dealers interviewed. It is possible that a larger track-laying tractor would be advantageous on a few of the larger farms but the four-bottom power unit (T-4) included here is the most typical for the area and had adequate power for most farms. Total annual overhead costs under 1947-1949 prices were $1,250 for the T-4 and $572 for the row-crop (W-2) tractor. Similar costs, using 1950-1952 prices, were $1,460 and $667, respectively (Table 7). Arbitrary values of 5 cents and 8 cents per mile were assigned as overhead costs to pickup trucks and 1½-ton trucks for 1947-1949 and 6 and 9 cents, respectively, for 1950-1952. These cost data are based on information obtained from farmers and dealers.

Farm Irrigation Equipment.--There was a wide range in the gallons-per-minute pumping capacity of irrigation wells and in the horsepower of electric motors used. Sample data indicate that the three sizes of wells listed here were typical of the area studied in 1948. They include pumping plants rated at 720, 900, and 1,125 gallons per minute. Typical overhead costs for this equipment, as well as for concrete pipe and siphons, reflected experience in the area and the same calculating principles as used for power units and machinery (Tables 8 and 9).

Prices of Farm Products and Materials and Services.--Farm products prices are not involved in the organization, practice, input, and cost analysis presented here. We present them for the convenience of those who wish to examine them. They are needed for any evaluation of earnings or analysis of relative economic advantages from various enterprize combinations. Local area prices for services and materials used in production include contract services, fertilizers,

TABLE 6

Typical Overhead Costs for Farm Machinery and Power Units on 41 Vegetable Farms in the Santa Maria and Adjacent Truck Crop Areas, 1947-1949

Item	Size	Original cost	Years service	Salvage value	Average invest.	Annual overhead costs					
						Depr.	Int.on inv.5%	Repairs	Taxes	Insur.	Total
1	2	3	4	5	6	7	8	9	10	11	12
		dollars	years			dollars					
Tool carrier	4-row	400	10	40	220	36	11	20	2	2	71
Bean cutter	2-row	50	5	0	25	10	1	3	--	--	14
Ditcher	42"	150	10	15	82	14	4	8	1	1	28
Lister	3-row	110	10	10	60	10	3	22	1	--	36
Lifter	2-row	110	10	10	60	10	3	6	1	--	20
Chisel	3-row	142	6	10	76	22	4	18	1	--	45
Plow	4-14"	820	10	82	45	74	22	82	5	3	186
Disk harrow	10 1/2'	700	6	100	400	100	20	105	4	3	232
Harrow (spike)	4-5'	205	20	20	112	9	6	10	1	1	27
Roller	10'	275	10	25	150	25	8	28	2	1	64
Float	10'	50	5	5	28	9	1	2	--	--	12
Cultivator	4R-Attach	300	12	30	165	22	8	75	2	1	108
Planter	2R-Potato	900	15	90	495	54	25	90	5	3	177
	2 bed Veg. (or shaper)	520	15	78	299	29	15	52	3	2	101
	4R-Bean,Beet	390	15	60	225	22	11	39	2	2	76
Broadcaster	Truck bed	80	16	0	40	5	2	3	--	--	10
Fertilizer	4-row	325	15	50	188	18	9	32	2	1	62
Duster	4-row	700	8	70	385	79	19	56	4	3	161
Sprayer	4R-12nozzle	840	8	84	462	94	23	67	5	3	192
Cauliflower marker		50	10	5	28	4	1	2	--	--	7
Cauliflower cart		100	10	10	55	9	3	10	--	--	22
Potato digger	1-row	310	8	30	170	35	8	31	2	1	77
Rake (side del.)	8'	300	10	50	175	25	9	30	2	1	67
Tractor	T-4	5,500	10	550	3,025	495	151	550	31	23	1,250
Tractor	W-2	2,200	7	330	1,265	267	63	220	13	9	572
Truck Pickup (per mile) a/											.05
Truck 1 1/2T (per mile) a/											.08

a/ Operating costs calculated at two cents per mile for pickup truck, three cents per mile for 1 1/2 ton truck. Miles operated were: Subarae I, pickup truck 7,500, 11,594,and 17,050; 1 1/2 ton truck 3,520, 5,440, and 8,000 for the 220, 340, and 500 acre farms respectively; Subarea II, pickup truck 5,120, 8,180, and 11,594; 1 1/2 ton truck 2,300, 3,648, and 5,068 for the 150, 240, and 320 acre farms respectively.

TABLE 6

TABLE 7

Typical Overhead Costs for Farm Machinery and Power Units on 41 Vegetable Farms in the Santa Maria and Adjacent Truck Crop Areas, 1950-1952

Item	Size	Original costs	Years service	Salvage value	Average invest.	Annual overhead costs					
						Depr.	Int.on inv.5%	Repairs	Taxes	Insur.	Total
1	2	3	4	5	6	7	8	9	10	11	12
		dollars	years	dollars							
Tool carrier	4-row	540	10	54	297	49	15	27	4	2	97
Bean cutter	2-row	60	5	6	33	11	2	9	--	--	22
Ditcher	42"	150	10	15	82	14	4	8	1	1	28
Lister	3-row	110	10	11	60	10	3	22	1	--	36
Lifter	2-row	135	10	14	74	12	4	7	1	1	25
Chisel	3-row	155	6	16	85	23	4	12	1	1	41
Plow	4-14"	950	10	95	522	86	26	10	6	4	132
Disk harrow	10 1/2'	850	6	128	489	120	24	128	6	4	282
Harrow (spike)	3-6'	250	20	25	138	11	7	12	2	1	33
Roller	10'	300	10	30	165	27	8	30	2	1	68
Float	10'	50	5	5	28	9	1	2	--	--	12
Cultivator	4R-Attach	425	12	42	234	32	12	106	3	2	155
Planter	2R-Potato	1,960	15	196	1,078	118	54	196	13	8	389
	2 bed Veg. (or shaper)	275	15	28	151	16	8	28	2	1	55
	4R-Bean,Beet	525	15	52	289	32	14	52	3	2	103
Broadcaster	Truck bed	80	16	8	44	4	2	3	1	--	10
Fertilizer	4-row	340	15	34	187	20	9	34	2	1	66
Duster	4-row	730	8	73	402	82	20	58	5	3	168
Sprayer	4R-12 nozzle	875	8	88	481	98	24	70	6	4	202
Cauliflower marker		40	10	4	22	4	1	2	--	--	7
Cauliflower cart		525	10	52	289	47	14	52	3	2	118
Potato digger	1-row	600	8	60	330	68	16	60	4	2	150
Rake	8'	540	10	54	297	49	15	54	4	2	124
Tractor	T-4	6,400	10	640	3,520	576	176	640	42	26	1,460
Tractor	W-2	2,550	7	382	1,466	310	73	255	18	11	667
Truck, Pickup (per mile) a/											.06
Truck, 1 1/2T (per mile) a/											.09

a/ Operating costs calculated at two cents per mile for pickup truck, three cents per mile for 1 1/2 ton truck. Miles operated were: Subarea I, pickup truck 7,500, 11,594, and 17,050; 1 1/2 ton truck 3,520, 5,440, and 8,000 for the 220, 340, and 500 acre farms respectively; Subarea II, pickup truck 5,120, 8,180, and 11,594; 1 1/2 ton truck 2,300, 3,648, and 5,068 for the 150, 240, and 320 acre farms respectively.

TABLE 8

Typical Overhead Costs for Farm Irrigation Equipment on 41 Vegetable Farms in the Santa Maria and Adjacent Truck Crop Areas, 1947-1949

Item	Size or number	Original cost	Years service	Salvage value	Average invest.	Annual overhead costs					
						Depr.	Int.on inv.5%	Repairs	Taxes	Insur.	Total
1	2	3	4	5	6	7	8	9	10	11	12
		dollars	years	dollars							
Well	280'-16"	3,640	20	--	1,820	182	91	--	--	--	273
Pumping plant											
30 HP	720 GPM	2,400	20	240	1,320	108	66	60	14	10	258
40 HP	900 GPM	3,000	20	300	1,650	135	82	75	17	12	321
50 HP	1125 GPM	3,500	20	350	1,925	158	96	88	20	14	376
Concrete Pipe	1000'-16"	1,290	40	--	645	32	32	13	7	5	89
Siphons	100	150	5	--	75	30	4	--	1	--	35

TABLE 9

Typical Overhead Costs for Farm Irrigation Equipment on Vegetable Farms in the Santa Maria and Adjacent Truck Crop Areas, 1950-1952

Item	Size or number	Original cost	Years service	Salvage value	Average invest.	Annual overhead costs					
						Depr.	Int.on inv.5%	Repairs	Taxes	Insur.	Total
1	2	3	4	5	6	7	8	9	10	11	12
		dollars	years	dollars							
Well	280'-16"	3,640	20	--	1,820	182	91	--	22	14	309
Pumping plant											
30 HP	720 GPM	2,665	20	266	1,461	120	73	67	18	11	289
40 HP	900 GPM	3,260	20	326	1,793	147	90	82	21	13	353
50 HP	1125 GPM	3,850	20	385	2,118	173	106	96	25	16	416
Concrete Pipe	1000'-16"	1,290	40	--	645	32	32	12	8	5	89
Siphons	100	165	5	--	82	33	4	--	1	1	39

fuels and lubricants, seeds, spray materials, labor, and other (Appendix Table 1). Prices for marketing services and materials include harvesting and packing, hauling, materials, and miscellaneous.

Input Costs for Power, Machinery, Irrigation Equipment, and Labor.--This section includes input costs for tractors, machinery, and irrigation equipment on each of the six typical organizations--a 220-, 340-, and 500-crop-acre unit in Subarea I and a 150-, 240-, and 320-crop-acre unit in Subarea II. These data reflect the two price levels--1947-1949 and 1950-1952. The six farm setups vary distinctly in how effectively they use equipment. The total acreage in vegetables and the proportion of the acreage in the various truck crops vary. Also, some farm organizations include rotation crops and some do not. Finally, there are differences among farms producing the latter crops in the crops chosen and in their respective acreages. The first step in establishing cost per hour or per acre-foot for each of the farm setups, therefore, was to determine the total amount each of the various kinds of equipment is used. It then was possible, using the prices and overhead costs data previously presented, plus physical inputs, to determine total annual costs and costs per hour or per acre-foot. Annual overhead cost data are calculated identically for a given piece of equipment for each farm organization. Per-acre or acre-foot cost, therefore, varies inversely according to annual use of the several equipment items. The calculations for both price periods use the same physical inputs. Cost differences between them, therefore, are due solely to price variations.

Tractor Use and Costs.--Total hours of use for the T-4 and W-2 tractors are determined for each farm organization. Practice information supplied by farmers made it possible to calculate typical tractor inputs per acre. Next, these data multiplied by the number of acres of crop and summed indicated total tractor hours per farm.[5/] The smallest number of hours of T-4 use was 725 on the 150-crop-acre

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5/ Detailed input data per acre are included in the second report in this series, Santa Maria Valley and Adjacent Area Vegetable Farms. II. Production Practices and Inputs, Costs, and Returns.

farm in Subarea II, and the greatest number of hours of use for this model was 2,888 hours for the 500-crop-acre farm in Subarea I (Table 10).

The same two organizations represented the extremes in wheel tractor use. The range was from 904-4,726 hours. Tractor power usually is available on a custom basis--at least in emergencies. Operators interviewed in this study, however, commonly maintained on their farms enough power units substantially to meet their seasonal power requirements. Timeliness in operations when producing vegetables is vital. Lack of power to perform operations at the right stage prejudices maximum yields and earnings. Tractors, of course, have maximum capacity limits established by the total hours of the year when field conditions make field work possible. This limit usually is unattainable in actual use. Operational requirements, necessity for repairs, availability of labor, and other factors impose practicable limits. An individual operator who is approaching or has reached the practicable capacity of his power unit or units provides additional capacity by buying another tractor. His power capacity, therefore, increases in discontinuous increments according to the kind and number of tractors he uses.

This section includes detailed data on overhead operating and total tractor costs per hour only for the 220-crop-acre Subarea I farms at 1950-1952 prices (Table 11). Comparable information for the other five farm setups at 1950-1952 prices and for all six organizations at 1947-1949 prices is included in the appendix.6/

Total tractor cost per hour of use was $1.77 for the T-4 and $1.27 for the W-2 tractor on the 220-crop-acre Subarea I farm at 1950-1952 prices (Table 11). The total for the T-4 power unit, used 1,279 hours per year, includes $1.14 overhead and $0.63 operating costs. This farm organization had two W-2 tractors which were used a total of 1,784 hours per year or an average of 892 hours each. Total cost per hour of use included $0.75 per hour overhead and $0.52 operating cost.

6/ See Appendix Tables 2 and 3, pages 74-84.

TABLE 10

Tractor Hours Use, Entire Crop Organization; Vegetable Farms in Subareas I and II, Santa Maria and Adjacent Truck Crop Areas, 1948

Subarea I Farms	220 crop acres			340 crop acres			500 crop acres		
		Hours use[a]			Hours use[a]			Hours use[a]	
Crop	Acres	T-4	W-2	Acres	T-4	W-2	Acres	T-4	W-2
1	2	3	4	5	6	7	8	9	10
Lettuce (Spr.)	34	195	153	50	287	226	57	327	257
Lettuce (Sr.)	45	258	203	104	597	469	116	666	523
Carrots[b]	31	186	375	18	108	218	40	240	484
Broccoli	27	122	184	54	244	369	64	289	437
Cauliflower[c]	47	266	695	114	646	1,685	127	720	1,877
Sugar beets	--	--	--	--	--	--	100	508	727
Tomatoes	39	191	12	--	--	--	--	--	--
Total crop	223	1,218	1,622	340	1,882	2,967	504	2,750	4,305
Non-crop	--	61	162	--	94	297	--	138	431
Total	--	1,279	1,784	--	1,976	3,264	--	2,888	4,736
Subarea II Farms	**150 crop acres**			**240 crop acres**			**320 crop acres**		
Lettuce (Spr.)	25	144	113	14	80	63	28	161	126
Lettuce (Sr.)	25	144	113	10	57	45	69	396	311
Lettuce (fall)	--	--	--	--	--	--	--	--	--
Carrots	--	--	--	--	--	--	17	102	186
Broccoli	16	72	109	38	171	260	28	126	191
Cauliflower	16	91	215	70	397	940	47	266	631
Beans	23	48	115	45	94	225	132	274	660
Potatoes	47	192	157	63	258	211	--	--	--
Total crop	152	691	822	240	1,057	1,744	321	1,325	2,105
Non-crop	--	34	82	--	53	174	--	126	236
Total	--	725	904	--	1,110	1,918	--	1,451	2,341

a/ Yields of 278 and 433 crates of saleable product, respectively, used for carrots and cauliflower in Subarea I, 200 and 320, respectively, in Subarea II.

b/ Oil weeded.

c/ Transplanted.

TABLE 11

Typical Overhead Costs and Operating Expenses for Tractors and Trucks; 220 Crop Acre Vegetable Farms in Subarea I, Santa Maria and Adjacent Truck Crop Areas, 1950-1952[a]

Item	Unit	Price	T-4[b]		W-2[c]	
			Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7
Tractors						
Annual use	hour	--	1,279	--	1,784	--
No. tractors	tractor	--	1	--	2	--
Overhead	dollar	--	1	1,460	1	667
Total overhead	dollar	--	1	1,460	2	1,334
Cost per hour	dollar	--		1.14		.75
Diesel fuel	gallon	.152	4,860	739	--	--
Gasoline	gallon	.199	--	--	4,460	888
Crankcase oil	quart	.15	192	29	144	22
Gear lubricant	quart	.137	40	5	14	2
Grease	pound	.137	128	18	89	12
Oil filters	one	.95	13	12	8	8
Total operating	dollar	--		803		932
Cost per hour	dollar	--		.63		.52
Total cost	dollar	--		2,263		2,266
Cost per hour	dollar	--		1.77		1.27
Trucks			½ Ton		1½ Ton	
Annual use	mile	--	7,500		3,520	
Total annual cost	dollar	--	--	600	--	422.40
Total cost per mile	dollar	--	--	.08	--	.12
Total cost per crop acre	dollar	--	--	2.69	--	1.89

a/ See Table 7 for detailed annual overhead costs. See Appendix Tables 2 and 3, pages 74 - 84, for detailed overhead and operating costs for other farm sizes at 1947-1949 and 1950-1952 price levels.

b/ Inputs for T-4 tractors calculated as follows: Subarea I, diesel fuel 3.8 gallons per hour, crankcase oil 15 quarts and oil filters 1 per 100 hours, transmission and gear lubricant 31 quarts and grease 100 pounds per 1,000 hours; diesel fuel 3.5 gallons per hour, other items same as Subarea I.

c/ Inputs for W-2 tractors calculated as follows: gasoline 2.5 gallons per hour, crankcase oil 8 quarts and oil filters 1 per 100 hours, transmission and gear lubricant 8 quarts and grease 50 pounds per 1,000 hours.

Total power costs per acre and per unit of product are very much affected by overhead costs as indicated by the above data. Overhead, being fixed, is in inverse relationship to hours of power unit use, hence, to the proportion of the tractor capacity that is used. The result is that operators have serious problems in minimizing power costs by adjusting operations to the equipment capacity. The various data on total costs per hour for the two different models of tractors in the six farm organizations clearly indicate this problem.

Thus, in Subarea I under 1950-1952 prices, the total cost per hour for T-4 power was $1.77, $2.10, and $2.14, respectively, for the three farm sizes (Table 13). Operating costs per hour was constant, and all variation, therefore, resulted from differences in overhead cost per hour. The latter factor ranged from $1.14-$1.52 per hour. Similar relationships are evident in Subarea II between the 150- and the 240-crop-acre farms. The largest-sized farm, however, does a better job of using T-4 power than the 240-crop-acre organization and has the same per-hour cost as the 150-acre farming unit. The reason for the prevailing direct relationship between increasing farm size in crop acres and cost per hour for T-4 power is evident in the data for hours of use per tractor (Table 13). The farmers increase power capacity more than they increase crop acres as farm size increases.

For W-2 tractors, the opposite is true. Total costs per hour decline as farm size increases in both subareas (Table 13). The reason, again, is evident; crop acres increase faster than power capacity. There is much more need for tillage tractor power than for seedbed preparation power on vegetable farms. It is easier, therefore, to adjust capacity to requirements for the W-2 tractors. It is clear, also, that operators of the typical vegetable farms studied have not succeeded in attaining as effective balance of unit capacities for T-4 as for W-2 tractors.

The Subarea I operators are more efficient than those in Subarea II as measured by cost per hour of farm power use. Costs are lower in Subarea I than for

Total power costs per acre and per unit of product are very much affected by the amount of power used per tractor. The result is that operators have serious problems in matching power items to achieve maximum efficiency in the operation of their tractors. The various data on total costs per hour for the two different models of tractors in the six farm organizations clearly indicate this problem.

Thus, in Subarea I under 1950-1952 prices, the total cost per hour for T-5 power was $1.77, $2.10, and $2.44, respectively, for the three farm sizes (Table 13). Operating costs per hour was constant, and all variation, therefore, resulted from differences in overhead cost per hour. The latter factor ranged from the 150- and the 240-crop-acre farms. The largest-sized farm, however, does a per-hour cost as the 150-acre farming unit. The reason for the prevailing direct power is evident in the data for hours of use per tractor (Table 12). The farms increase power capacity more than they increase crop acres as farm size increases.

For W-9 tractors, the opposite is true. Total costs per hour decline as farm size increases in both subareas (Table 13). The reason, again, is evident; crop acres increase faster than power capacity. There is much more need for tillage

TABLE 12

Typical Overhead Costs and Operating Expenses per Hour and per Acre for Tractors and Trucks; Vegetable Farms in Subareas I and II, Santa Maria and Adjacent Truck Crop Areas, 1947-1949 a/

Subarea I		220 crop acres		340 crop acres		500 crop acres	
	Unit	T-4	W-2	T-4	W-2	T-4	W-2
1	2	3	4	5	6	7	8
Tractors							
Hours use	one	1,279	1,784	1,976	3,264	2,888	4,736
No. tractors	one	1	2	2	3	3	4
Hours per tractor		1,279	892	988	1,088	963	1,184
Cost factors							
Total overhead	dol.	1,250	1,144	2,500	1,716	3,750	2,288
Total operating	dol.	627	794	968	1,469	1,414	2,139
Total cost	dol.	1,877	1,938	3,468	3,185	5,164	4,427
Overhead per hour	dol.	.98	.64	1.26	.53	1.30	.48
Operating per hour	dol.	.49	.44	.49	.45	.49	.45
Total per hour	dol.	1.47	1.08	1.75	.98	1.79	.93
Trucks		½ Ton	1½ Ton	½ Ton	1½ Ton	½ Ton	1½ Ton
Cost per acre	dol.	2.55	1.74	2.39	1.76	2.39	1.75

Subarea II		150 crop acres		240 crop acres		320 crop acres	
	Unit	T-4	W-2	T-4	W-2	T-4	W-2
Tractors							
Hours use	one	725	904	1,110	1,918	1,451	2,341
No. tractors	one	1	2	2	3	2	3
Hours per tractor		725	452	555	639	726	780
Cost factors							
Total overhead	dol.	1,250	1,154	2,500	1,716	2,500	1,716
Total operating	dol.	337	406	518	862	677	1,059
Total cost	dol.	1,587	1,560	3,018	2,578	3,177	2,775
Overhead per hour	dol.	1.72	1.28	2.26	.90	1.72	.73
Operating per hour	dol.	.46	.45	.47	.45	.47	.45
Total per hour	dol.	2.19	1.73	2.73	1.35	2.19	1.18
Trucks		½ Ton	1½ Ton	½ Ton	1½ Ton	½ Ton	1½ Ton
Cost per acre	dol.	2.54	1.79	2.51	1.76	3.18	2.19

a/ See Appendix Table 2, page 74 for detailed overhead and operating costs.

TABLE 13

Typical Overhead Costs and Operating Expenses per Hour and per Acre for Tractors and Trucks; Vegetable Farms in Subareas I and II, Santa Maria and Adjacent Truck Crop Areas, 1950-1952[a]

Subarea I		220 crop acres		340 crop acres		500 crop acres	
	Unit	T-4	W-2	T-4	W-2	T-4	W-2
1	2	3	4	5	6	7	8
Tractors							
Hours use	one	1,279	1,784	1,976	3,264	2,888	4,736
No. tractors	one	1	2	2	3	3	4
Hours per tractor		1,279	892	988	1,088	963	1,184
Cost factors							
Total overhead	dol.	1,460	1,334	2,920	2,001	4,380	2,668
Total operating	dol.	803	932	1,239	1,720	1,813	2,497
Total cost	dol.	2,263	2,266	4,159	3,721	6,193	5,165
Overhead per hour	dol.	1.14	.75	1.48	.61	1.52	.56
Operating per hour	dol.	.63	.52	.63	.53	.63	.53
Total per hour	dol.	1.77	1.27	2.10	1.14	2.14	1.09
Trucks		½ Ton	1½ Ton	1 Ton	1½ Ton	1 Ton	1½ Ton
Cost per acre		2.69	1.89	2.73	1.92	2.73	1.92

Subarea II		150 crop acres		240 crop acres		320 crop acres	
	Unit	T-4	W-2	T-4	W-2	T-4	W-2
Tractors							
Hours use	one	725	904	1,110	1,918	1,451	2,341
No. tractors	one	1	2	2	3	2	3
Hours per tractor		725	452	555	639	726	780
Cost factors							
Total overhead	dol.	1,460	1,334	2,920	2,001	2,920	2,001
Total operating	dol.	422	477	646	1,010	845	1,234
Total cost	dol.	1,882	1,811	3,566	3,011	3,765	3,235
Overhead per hour	dol.	2.01	1.48	2.63	1.04	2.01	.85
Operating per hour	dol.	.58	.53	.58	.53	.58	.53
Total per hour	dol.	2.60	2.00	3.21	1.57	2.59	1.38
Trucks		½ Ton	1½ Ton	½ Ton	1½ Ton	½ Ton	1½ Ton
Cost per acre	dol.	1.45	.98	2.87	1.92	3.64	2.38

a/ See Appendix Table 3, page 80, for detailed overhead and operating costs.

TABLE 13

Special Treatment Effects, Net Income Before Taxes and Some Ratios for
Selected Age Groups Insured in Issue Year 1, Policies 2 and 12,
Males Insured with Minimum Face Amount $10,000

Duration	250 Group Whole Life			350 Group Whole Life			350 Group 20-Pay Life		
	Net Income	T-4	W-2	Net Income	T-4	W-2	Net Income	T-4	W-2
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Duration	1,250 Group Whole Life			2,500 Group Whole Life			2,500 Group 20-Pay Life		
	Net Income	T-4	W-2	Net Income	T-4	W-2	Net Income	T-4	W-2
1	725	704	1,110	1,951	1,895	2,984			
2									
3				836	756	796			
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

a/ See Appendix Table 3, page 80, for detailed overhead and operating costs.

Subarea II for both tractor models in each of the relative farm sizes. Differences per hour range from 29 cents for the W-2 tractors on the Subarea I, 500-acre farm and the Subarea II, 340-acre farm to $1.11 for the T-4 tractors on the Subarea I, 340-acre and Subarea II, 240-acre farms (Table 13).

Price changes between the two periods materially increased the cost per hour for farm power but did not otherwise affect the above-discussed relationships. Total per-hour cost for the T-4 tractor on the 220-crop-acre farm was $1.47 at 1947-1949 prices and $1.77 at 1950-1952 prices (Tables 12 and 13). Comparable figures for the W-2 tractor were $1.08 and $1.27 per hour. The range of differences in cost per hour between farms in Subareas I and II was from 25-98 cents in the 1947-1949 period (Tables 12 and 13).

Machinery Use and Costs.--Overhead costs per hour were calculated for the equipment used by Santa Maria vegetable growers. Total annual cost (Tables 6 and 7) for each item of equipment was divided by the hours of use (Appendix Table 4) according to the various farm sizes. Total annual cost per farm for all farm machinery, not including power units or irrigation, ranged from $1,316-$2,700 in Subarea I and from $1,674-$1,704 in Subarea II at 1947-1949 prices (Table 14). The range at 1950-1952 prices was from $1,534-$3,296 in Subarea I and from $2,096-$2,408 in Subarea II (Table 15).

Two factors affected the composition and the magnitude of the annual costs for equipment--the scale of farm operations and the combination of enterprises. Total annual costs for equipment increased consistently with farm size in Subarea I where there was relatively little variation in enterprise organization associated with over-all scale of operations. Farms in Subarea II, however, reflect the dominant influence of change in enterprise organization. Thus, the largest farm, 320 crop acres, had the lowest total annual equipment cost at 1950-1952 prices and the second lowest at 1947-1949 prices. These farms produced no potatoes, hence, saved the annual cost of the specialized equipment required for this crop.

TABLE 14

Typical Machinery Hours Use and Annual Overhead Costs, Entire Crop Organization; Vegetable Farms in Subareas I and II, Santa Maria and Adjacent Truck Crop Areas, 1947-1949/

Subarea I Farms	220 crop acres				340 crop acres				500 crop acres			
Item	Hours	Number machines	Total cost	Cost per hour	Hours	Number machines	Total cost	Cost per hour	Hours	Number machines	Total cost	Cost per hour
1	2	3	4	5	6	7	8	9	10	11	12	13
			dollars				dollars				dollars	
Tool carrier	398	2	142	.36	458	3	213	.48	914	4	284	.32
Ditcher	112	1	28	.25	170	1	28	.16	252	1	28	.11
Lister	125	1	36	.29	195	1	36	.18	287	2	72	.25
Lifter	161	1	20	.12	93	1	20	.22	308	1	20	.06
Chisel	--	--	--	--	--	--	--	--	67	1	45	.67
Plow	235	1	186	.79	368	1	186	.50	536	2	372	.69
Disc harrow	484	1	232	.48	746	2	464	.62	1,001	3	696	.70
Harrow (spike)	272	1	27	.10	369	2	54	.15	546	2	54	.10
Roller	212	1	64	.30	402	1	64	.16	524	2	128	.24
Float	264	1	12	.04	402	1	12	.03	607	2	24	.04
Cultivator	860	2	216	.25	1,332	2	216	.16	1,942	3	324	.17
Veg. planter	187	1	101	.54	313	2	202	.64	410	2	202	.49
Bean, beet planter	--	--	--	--	--	--	--	--	80	1	76	.95
Broadcaster	--	--	--	--	45	1	10	.22	53	1	10	.19
Fertilizer dist.	180	1	62	.34	228	1	62	.27	388	2	124	.32
Duster	172	1	161	.94	228	1	161	.71	254	1	161	.63
Sprayer	18	custom			10	custom			23	custom		
Cauliflower marker	24	1	7	.29	57	1	7	.12	64	2	14	.22
Cauliflower cart	327	1	22	.07	792	2	44	.06	883	3	66	.07
Total			1,316				1,779				2,700	

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| | | |

Table 14 continued.

Subarea II Farms	150 crop acres				240 crop acres				320 crop acres			
Item	Hours	Number machines	Total cost	Cost per hour	Hours	Number machines	Total cost	Cost per hour	Hours	Number machines	Total cost	Cost per hour
1	2	3	4	5	6	7	8	9	10	11	12	13
			dollars				dollars				dollars	
Tool carrier	223	2	142	.64	339	3	213	.63	412	3	213	.51
Bean cutter	28	1	14	.50	47	1	14	.30	92	1	14	.15
Ditcher	76	1	28	.37	120	1	28	.23	160	1	28	.18
Lister	110	1	36	.33	169	1	36	.21	183	1	36	.20
Lifter	--	--	--	--	--	--	--	--	68	1	20	.29
Chisel	38	1	45	1.18	50	1	45	.90	--	--	--	--
Plow	133	1	186	1.40	212	1	186	.88	201	1	186	.92
Disc harrow	247	1	232	.94	358	1	232	.65	608	1	232	.38
Harrow (spike)	96	1	27	.28	107	1	27	.25	243	2	54	.22
Roller	107	1	64	.60	175	1	64	.36	220	1	64	.29
Float	110	1	12	.11	178	1	12	.07	232	1	12	.05
Cultivator	390	1	108	.28	690	1	108	.16	1,055	2	216	.20
Planters:												
2 row potato	19	1	177	9.32	25	1	177	7.08	--	--	--	--
2 bed veg (or shaper)	75	1	101	1.35	149	1	101	.68	209	2	202	.97
4 row bean, beet	12	1	76	6.33	22	1	76	3.45	66	1	76	1.15
Broadcaster	13	1	10	.77	32	1	10	.31	35	1	10	.29
Fertilizer dist.	82	1	62	.76	152	1	62	.41	111	1	62	.56
Duster	32	1	161	5.03	140	1	161	1.15	94	1	161	1.71
Sprayer	--	--	--	--	--	--	--	--	10	custom		
Cauliflower marker	8	1	7	.88	35	1	7	.20	24	1	7	.29
Cauliflower cart	90	1	22	.24	392	2	44	.11	263	2	44	.17
Potato digger	33	1	77	2.33	44	1	77	1.75	--	--	--	--
Rake (side del.)	14	1	67	4.79	27	1	67	2.48	79	1	67	.85
Total			1,654				1,747				1,704	

a/ See Table 6 for detailed annual overhead costs.

| | | |

TABLE 15

Typical Machinery Hours Use and Annual Overhead Costs, Entire Crop Organization; Vegetable Farms in Subareas I and II, Santa Maria and Adjacent Truck Crop Areas, 1950-1952 a/

Subarea I Farms	220 crop acres				340 crop acres				500 crop acres			
Item	Hours	Number machines	Total cost	Cost per hour	Hours	Number machines	Total cost	Cost per hour	Hours	Number machines	Total cost	Cost per hour
1	2	3	4	5	6	7	8	9	10	11	12	13
			dollars				dollars				dollars	
Tool carrier	398	2	194	.49	458	3	291	.64	914	4	388	.42
Ditcher	112	1	28	.25	170	1	28	.16	252	1	28	.11
Lister	125	1	36	.29	195	1	36	.18	287	2	72	.25
Lifter	161	1	25	.16	93	1	25	.27	308	1	25	.08
Chisel	--	--	--	--	--	--	--	--	67	1	41	.61
Plow	235	1	132	.56	368	1	132	.36	536	2	264	.49
Disc harrow	484	1	282	.58	746	2	564	.76	1,001	3	846	.85
Harrow (spike)	272	1	33	.12	369	2	66	.18	546	2	66	.12
Roller	212	1	68	.32	402	1	68	.17	524	2	136	.26
Float	264	1	12	.05	402	1	12	.03	607	2	24	.04
Cultivator	860	2	310	.36	1,332	2	310	.23	1,942	3	465	.24
Veg. planter	187	1	55	.29	313	2	110	.35	410	2	110	.27
Bean, beet planter	--	--	--	--	--	--	--	--	80	1	103	1.29
Broadcaster	--	--	--	--	45	1	10	.22	53	1	10	.19
Fertilizer dist.	180	1	66	.37	228	1	66	.29	388	2	132	.34
Duster	172	1	168	.98	228	1	168	.74	254	1	168	.66
Sprayer	18	custom			10	custom			23	custom		
Cauliflower marker	24	1	7	.29	57	1	7	.12	64	2	14	.22
Cauliflower cart	327	1	118	.36	792	2	236	.30	883	3	354	.40
Total			1,534				2,129				3,246	

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Table 15 continued.

Subarea II Farms	150 crop acres				240 crop acres				320 crop acres			
Item	Hours	Number machines	Total cost	Cost per hour	Hours	Number machines	Total cost	Cost per hour	Hours	Number machines	Total cost	Cost per hour
1	2	3	4	5	6	7	8	9	10	11	12	13
			dollars				dollars				dollars	
Tool carrier	223	2	194	.87	339	3	291	.86	412	3	291	.71
Bean cutter	28	1	22	.79	47	1	22	.47	92	1	22	.24
Ditcher	76	1	28	.37	120	1	28	.23	160	1	28	.18
Lister	110	1	36	.33	169	1	36	.21	183	1	36	.20
Lifter	--	--	--	---	--	--	--	--	68	1	25	.37
Chisel	38	1	41	1.08	50	1	41	.82	--	--	--	--
Plow	133	1	132	.99	212	1	132	.62	201	1	132	.66
Disc harrow	247	1	282	1.14	358	1	282	.79	608	1	282	.46
Harrow (spike)	96	1	33	.34	107	1	33	.31	243	2	66	.27
Roller	107	1	68	.64	175	1	68	.39	220	1	68	.31
Float	110	1	12	.11	178	1	12	.07	232	1	12	.05
Cultivator	390	1	155	.40	690	1	155	.22	1,056	2	310	.29
Planters:												
2 row potato	19	1	389	20.47	25	1	389	15.56	--	--	--	--
2 row bed veg.(or shaper)	75	1	55	.73	149	1	55	.37	209	2	110	.53
4 row bean, beet	12	1	103	8.58	22	1	103	4.68	66	1	103	1.56
Broadcaster	13	1	10	.77	32	1	10	.31	35	1	10	.29
Fertilizer dist.	82	1	66	.80	152	1	66	.43	111	1	66	.59
Duster	32	1	168	5.25	140	1	168	1.20	94	1	168	1.79
Sprayer	--	--	--	--	--	--	--	--		10 custom		
Cauliflower marker	8	1	7	.88	35	1	7	.20	24	1	7	.29
Cauliflower cart	90	1	118	1.31	392	2	236	.60	263	2	236	.90
Potato digger	33	1	150	4.55	44	1	150	3.41	--	--	--	--
Rake (side del.)	14	1	124	8.86	27	1	124	4.59	79	1	124	1.57
Total			2,193				2,408				2,096	

a/ See Table 7 for detailed annual overhead costs.

| | | |

Irrigation Water Use and Costs.--Limited annual rainfall in the Santa Maria Valley and adjacent areas makes irrigation essential for vegetable production. Typical amounts used per crop, as reported by farmers interviewed, vary from 20 inches for spring lettuce to 46 inches for cauliflower (Table 16). Some farmers with ample supplies reported greater water use. Wells supply all irrigation water used on farms surveyed and, at the time of the interviews, practically all irrigating was by the row method. Sprinkling increased during the 1950-1952 period, particularly in Subarea II. No analysis of this practice is included in this report.

Total acre-feet of irrigation water used on typical farms varies from 594-1,399 acre-feet in Subarea I and from 357-654 acre-feet in Subarea II (Table 16). Detailed information on irrigation water cost is shown for the 220-crop-acre farm in Subarea I at 1950-1952 prices (Table 17).7/ Summary data for all farm sizes in both subareas at the two price levels, also, are presented (Tables 18 and 19). Detailed cost information for farm sizes other than the 220-crop-acre farm, also, is available in the appendix.

The 220-crop-acre farm in Subarea I produces 594 acre-feet of irrigation water at an average cost of $5.58 (Table 17). Two wells are used, and the costs cover both overhead and power. Power costs involve two charges--the flat annual demand charge according to horsepower of the motor and the cost of kilowatt-hours of electrical energy. Cost for the latter is related inversely to the amount used. Farmers capitalize on this fact by using pumping units to full capacity where possible. It is evident that this ideal is not fully reached on the 220-crop-acre farm in Subarea I. This organization can utilize the full capacity of the 1,125-gallons-per-minute pumping plant, but only a portion of the 900-gallon plant is needed to round out total farm irrigation water requirements (Table 17). Water

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7/ The power rates in Pacific Gas and Electrical Agricultural Power Schedule PA-1, dated November 10, 1952, were used in these calculations.

1/ The power rates in Pumping Use and [illegible] Agricultural Power Schedule [illegible] effective November 10, 1952, were used in [illegible] calculations.

TABLE 16

Typical Irrigation Water Use, Entire Farm Organization;
Vegetable Farms in Subareas I and II, Santa Maria and
Adjacent Truck Crop Areas, 1947-1949 and 1950-1952

Subarea I farms		220 crop acres		340 crop acres		500 crop acres	
Crop	Water per acre[a/]	Acres	Total water	Acres	Total water	Acres	Total water
1	2	3	4	5	6	7	8
	inches		acre inches		acre inches		acre inches
Lettuce (Spring)	20	34	680	50	1,000	57	1,140
Lettuce (Summer)	31	45	1,395	104	3,224	116	3,596
Carrots	26	31	806	18	468	40	1,040
Broccoli	34	27	918	54	1,836	64	2,176
Cauliflower	46	47	2,162	114	5,244	127	5,842
Sugar Beets	30	--	--	--	--	100	3,000
Tomatoes	30	39	1,170	--	--	--	--
Total	--	223	7,131	340	11,772	504	16,794
Acre feet	--	--	594	--	981	--	1,399
Subarea II farms		150 crop acres		240 crop acres		320 crop acres	
Lettuce (Spring)	20	25	500	14	280	28	560
Lettuce (Summer)	31	25	775	10	310	44	1,364
Lettuce (Fall)	31	--	--	--	--	25	525
Carrots	26	--	--	--	--	17	442
Broccoli	34	16	544	38	1,292	28	952
Cauliflower	46	16	736	70	3,220	47	2,162
Beans (dry)	14	23	322	45	630	132	1,848
Potatoes	30	47	1,410	63	1,890	--	--
Total	--	152	4,287	240	7,622	321	7,853
Acre feet	--	--	357	--	635	--	654

a/ Typical amounts as reported by farms interviewed.

TABLE 17

Typical Overhead Costs and Operating Expenses
for Individual Units and Total all Pumping Plants;
220 Crop Acre Vegetable Farm in Subarea I, Santa Maria
and Adjacent Truck Crop Areas, 1950-1952[a]

Item	Unit	Pumping plants				All specified items
		900 G.P.M.		1,125 G.P.M.		
		Number or amount	Cost	Number or amount	Cost	
1	2	3	4	5	6	7
			dollars		dollars	
Annual use	acre feet	144	--	450	--	594
	hours	864	--	2,160	--	3,024
Number plants	plant	1	--	1	--	2
Overhead[b]	dollar	--	662	--	725	
Total overhead	dollar	--	662	--	725	1,387
Cost per acre ft.	dollar	144	4.59	450	1.61	2.34
Pumping head	foot	115	--	115	--	115
Plant efficiency	percent	59.2	--	59.2	--	59.2
Horsepower	h.p.	40	--	50	--	--
Demand	dollar	40	256	--	--	256
	dollar	--	--	50	285	285
Power	dollar	28,656	401	89,550	986	1,387
Total operating	dollar	--	657	--	1,271	1,928
Cost per acre ft.	dollar	144	4.56	450	2.82	3.25
Total cost	dollar	--	1,319	--	1,996	3,315
Cost per acre ft.	dollar	144	9.15	450	4.43	5.58

a/ See Table 9 for detailed annual overhead costs. See Appendix Tables 5 and 6, pages 91-96 for detailed overhead and operating costs for other farm sizes at 1947-1949 and 1950-1952 price levels.

b/ Includes overhead charges for well, pumping plant only.

from the smaller capacity well costs a total of $9.15 per acre-foot at 1950-1952 prices: $4.59 for overhead and $4.56 for operating. Water from the larger well costs $4.43, including $1.61 for overhead and $2.82 for operating. Average cost of all irrigation water at $5.58 is heavily influenced by the cheaper performance of the larger well.

Average cost of water at 1950-1952 prices ranges from $4.21 per acre-foot on the 340 crop acre to $5.58 on the 220-crop-acre farm (Table 19). A definite scale advantage reveals itself in comparing the smallest-and the medium-sized farm. No appreciable change is evident for the largest farm. Cost of irrigation water in Subarea II increases with size of farm. Water costs, also, are higher in this subarea than in Subarea I, except for the 150-crop-acre farm. This is the only one of the six organizations that is able to obtain adequate water from only one well.

Irrigation water was cheaper to vegetable producers in both subareas under 1947-1949 price levels than in 1950-1952 (Tables 18 and 19). Cost increases during the latter period ranged from 24-51 cents in Subarea I and from 38-54 cents in Subarea II.

Labor Use and Costs.--The analysis included calculating detailed labor inputs per acre in production operations in the same manner as the power and machinery inputs.[8/] Vegetable producers and shipping organizations furnished information regarding the inputs of labor and other requirements in harvesting and packing. Estimated labor used for these latter purposes is presented on a per-hundred crate or other yield unit basis for the principal crops grown in the area. This makes it possible to determine labor inputs per acre in harvesting and packing given yields (Table 20).

8/ See page 21 and footnote.

1/ See page 61 and footnote.

TABLE 18

Typical Total Overhead Costs and Operating Expenses for all Farm Pumping Plants; Vegetable Farms in Subareas I and II, Santa Maria and Adjacent Truck Crop Areas, 1947-1949 a/

Item	Unit	220 crop acres	340 crop acres	500 crop acres
1	2	3	4	5
Subarea I				
Annual use	acre	594	981	1,399
	feet			
	hours	3,024	4,709	6,716
Number plants	plant	2	2	3
Overhead	dollar	1,243	1,298	--
Total overhead	dollar	1,243	1,298	1,947
Cost per acre ft.	dollar	2.09	1.32	1.39
Pumping head	foot	115	115	115
Plant efficiency	percent	59.2	59.2	59.2
Demand	h.p.	201	--	--
	h.p.	225	450	675
Power	dollar	1,345	2,070	2,984
Total operating	dollar	1,771	2,520	3,659
Cost per acre ft.	dollar	2.98	2.57	2.62
Total cost	dollar	3,014	3,810	5,606
Cost per acre ft.	dollar	5.07	3.87	4.01

Item	Unit	150 crop acres	240 crop acres	320 crop acres
1	2	3	4	5
Subarea II				
Annual use	acre	357	635	654
	feet			
	hours	2,678	4,110	3,922
Number plants	plant	1	2	2
Overhead	dollar	531	1,125	1,188
Cost per acre ft.	dollar	1.49	1.77	1.82
Pumping head	foot	88	88	88
Plant efficiency	percent	52	52	52
Demand	h.p.	151	151	--
	h.p.	--	201	402
Power	dollar	658	1,260	1,311
Total operating	dollar	809	1,612	1,713
Cost per acre ft.	dollar	2.27	2.54	2.62
Total cost	dollar	1,340	2,737	2,901
Cost per acre ft.	dollar	3.75	4.31	4.44

a/ See Appendix Table 5, page 91, for detailed overhead and operating costs by pumping units.

TABLE 19

Typical Total Overhead Costs and Operating Expenses for all Farm Pumping Plants; Vegetable Farms in Subareas I and II, Santa Maria and Adjacent Truck Crop Areas, 1950-1952 a/

Item	Unit	220 crop acres	340 crop acres	500 crop acres
1	2	3	4	5
Subarea I				
Annual use	acre feet	594	981	1,399
	hours	3,024	4,709	6,716
Number plants	plant	2	2	3
Total overhead b/	dollar	1,387	1,450	2,175
Cost per acre ft.	dollar	2.34	1.48	1.55
Pumping head	foot	115	115	115
Plant efficiency	percent	59.2	59.2	59.2
Demand 40 h.p.	dollar	256	--	--
50 h.p.	dollar	285	570	855
Power	dollar	1,387	2,110	3,041
Total operating	dollar	1,928	2,680	3,896
Cost per acre ft.	dollar	3.25	2.73	2.78
Total cost	dollar	3,315	4,130	6,071
Cost per acre ft.	dollar	5.58	4.21	4.34

Item	Unit	150 crop acres	240 crop acres	320 crop acres
1	2	3	4	5
Subarea II				
Annual use	acre feet	357	635	654
	hour	2,678	4,110	3,922
Number plants	plant	1	2	2
Total overhead b/	dollar	598	1,260	1,324
Cost per acre ft.	dollar	1.68	1.98	2.02
Pumping head	foot	88	88	88
Plant efficiency	percent	52.0	52.0	52.0
Demand 30 h.p.	dollar	192	192	--
40 h.p.	dollar	--	256	512
Power	dollar	686	1,320	1,374
Total operating	dollar	878	1,768	1,886
Cost per acre ft.	dollar	2.46	2.78	2.88
Total cost	dollar	1,476	3,028	3,210
Cost per acre ft.	dollar	4.13	4.77	4.91

a/ See Appendix Table 6, page 94 for detailed overhead and operating costs by pumping units.

b/ Includes overhead charges for well, pumping plant only.

TABLE 20

Per Acre Inputs and Costs by Crops; 220 Crop Acre Vegetable Farm in Subarea I, Santa Maria and Adjacent Truck Crop Areas, 1950-1952 [a]

Item	Unit	Price or cost	Lettuce				Carrots [b]		Broccoli		Cauliflower [c]	
			Spring		Summer or fall							
			Number or amount	Cost	Number or amount	Cost	Number or amount	Cost	Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7	8	9	10	11	12	13
		dollars		dollars		dollars		dollars		dollars		dollars
Ranch labor												
Tractor driver	hour	1.00	10.2	10.20	10.2	10.20	17.5	17.50	12.3	12.30	15.7	15.70
Irrigator	hour	1.00	20.0	20.00	20.0	20.00	17.4	17.40	21.7	21.70	30.3	30.30
Compensation Insurance	$100	1.45	--	.44	--	.44	--	.51	--	.49	--	.67
Total				30.64		30.64		35.41		34.49		46.67
Contract Services												
Pre-harvest labor												
Hoe hand	hour	.80	23.6	18.88	23.6	18.88	15.6	12.48	28.4	22.72	11.1	8.88
Harvest labor [d]												
Harvester	hour	--	(16.8)	--	(12.4)	--	(68.9)	--	(52.7)	--	(21.6)	--
Lidder	hour	--	(2.1)	--	(2.7)	--	(4.1)	--	(2.0)	--	(5.4)	--
Loader	hour	--	(4.2)	--	(5.4)	--	(8.1)	--	(3.9)	--	(10.8)	--
Truck driver	hour	--	(2.1)	--	(2.7)	--	(4.1)	--	(2.0)	--	(5.4)	--
Foreman	hour	--	(2.1)	--	(2.7)	--	(4.1)	--	(2.0)	--	(5.4)	--
Soil fumigating	acre	24.30	1/3	8.10	1/3	8.10	--	--	--	--	--	--
Dusting, air	acre	2.40	1	2.40	1	2.40	1	2.40	1	2.40	1	2.40
Spray carrots	acre	2.50	--	--	--	--	1	2.50	--	--	--	--
Total production				29.38		29.38		17.38		25.12		11.28
Harvest, pack, load	container		168	50.40	214	64.20	278	208.50	156	109.20	433	99.59
Hauling (local)	container		168	16.80	214	21.40	278	27.80	156	7.80	433	21.65
Miscellaneous harvest	container		168	24.36	214	31.03	278	63.94	156	34.32	433	43.30
Total harvesting and marketing				91.56		116.63		200.24		151.32		164.54
Total contract services				120.94		146.01		317.62		176.44		175.82

(Continued on next page.)

| | | |

Table 20 continued.

Item	Unit	Price or cost	Lettuce				Carrots [b]		Broccoli		Cauliflower [c]	
			Spring		Summer or fall							
			Number or amount	Cost	Number or amount	Cost	Number or amount	Cost	Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7	8	9	10	11	12	13
		dollars		dollars		dollars		dollars		dollars		dollars
Materials												
Production												
Seed	pound	varies	1.0	3.20	1.0	3.20	3.0	4.20	2.0	4.10	.25	2.81
Fertilizer(10-10-5)	pound	.035	700	24.50	700	24.50	600	21.00	800	28.00	800	28.00
Fertilizer (NH_3)	pound	.115	75	8.62	75	8.62	60	6.90	100	11.50	60	6.90
DDT5Zn3S25	pound	.125	--	--	--	--	40	5.00	--	--	--	--
DDT5Zn3 Parathion 2	pound	.140	40	5.60	40	5.60	--	--	40	5.60	120	16.80
DDT (5%)	pound	--	--	--	--	--	--	--	--	--	--	--
DDT (50%)	pound	--	--	--	--	--	--	--	--	--	--	--
DDT Sulfur	pound	--	--	--	--	--	--	--	--	--	--	--
TEPP	pound	--	--	--	--	--	--	--	--	--	--	--
Parathion 2%	pound	--	--	--	--	--	--	--	--	--	--	--
Weed oil	gallon	.195	--	--	--	--	80	15.60	--	--	--	--
Total production				41.92		41.92		52.70		49.20		54.51
Marketing												
Containers	one	--	168	92.40	214	117.70	278	166.80	156	68.64	433	181.86
Lids	one	--	168	15.10	214	19.26	278	25.02	156	14.82	433	23.82
Pack material	crate	--	168	5.90	214	7.49	278	29.88	156	27.30	433	--
Ice	crate	--	--	--	--	--	278	29.19	156	15.60	--	--
Total marketing				113.40		144.45		250.89		126.36		205.68
Total materials				155.32		186.37		303.59		175.56		260.19

(Continued on next page.)

Table 20 continued.

Item	Unit	Price or cost	Lettuce: Spring Number or amount	Lettuce: Spring Cost	Lettuce: Summer or fall Number or amount	Lettuce: Summer or fall Cost	Carrots [b] Number or amount	Carrots [b] Cost	Broccoli Number or amount	Broccoli Cost	Cauliflower [c] Number or amount	Cauliflower [c] Cost
1	2	3	4	5	6	7	8	9	10	11	12	13
		dollars		dollars		dollars		dollars		dollars		dollars
Miscellaneous												
Real Estate tax	acre	--	1	7.53	1	7.53	1	7.53	1	7.53	1	7.53
Real Estate investment [e]	acre	--	1	33.88	1	33.88	1	33.88	1	33.88	1	33.88
General overhead [f]		--	--	6.55	--	7.04	--	8.78	--	7.64	--	11.09
Labor overhead [g]		--	--	6.96	--	6.96	--	6.87	--	8.01	--	8.11
Total				54.92		55.41		57.06		57.06		60.61
Irrigation												
Concrete pipe	acre	.10	1	.10	--	.10	--	.10	--	.10	--	.10
Siphons	acre	.35	1	.35	--	.35	--	.35	--	.35	--	.35
Water	acre inch	.45	20	9.00	31	13.95	26	11.70	34	15.30	46	20.70
Total				9.45		14.40		12.15		15.75		21.15
Power												
T-4 Tractor	hour	1.77	5.7	10.09	5.7	10.09	6.0	10.62	4.5	7.96	5.7	10.09
W-2 Tractor	hour	1.27	4.5	5.72	4.5	5.72	11.0	13.97	6.8	8.64	14.4	18.29
Pickup truck		--	--	2.69	--	2.69	--	2.69	--	2.69	--	2.69
1 1/2 ton truck		--	--	1.89	--	1.89	--	1.89	--	1.89	--	1.89
Total				20.39		20.39		29.17		21.18		32.96
Equipment												
Tool carrier	4-row	.49	1.08	.53	1.08	.53	10.21	5.00	.87	.43	1.17	.57
Ditcher	42 inch	.25	.50	.12	.50	.12	.50	.12	.50	.12	.50	.12
Lister	3-row	.29	.58	.17	.58	.17	.50	.14	.37	.11	.67	.19
Lifter	2-row	.16	--	--	--	--	5.19	.83	--	--	--	--
Plow	4-14 inch	.56	1.00	.56	1.00	.56	1.00	.56	1.00	.56	1.25	.70
Disc harrow	10 1/2 foot	.58	2.50	1.45	2.50	1.45	3.00	1.74	1.64	.95	1.92	1.11
Spike harrow	4-5 foot	.12	1.50	.18	1.50	.18	1.50	.18	.64	.08	.67	.08

(Continued on next page.)

Table 20. continued.

Item	Unit	Price or cost	Lettuce				Carrots b/		Broccoli		Cauliflower c/	
			Spring		Summer or fall							
			Number or amount	Cost	Number or amount	Cost	Number or amount	Cost	Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7	8	9	10	11	12	13
		dollars		dollars		dollars		dollars		dollars		dollars
Equipment (Continued)												
Roller	10 foot	.32	1.16	.37	1.16	.37	1.00	.32	1.00	.32	1.33	.43
Float	10 foot	.05	1.16	.06	1.16	.06	1.00	.05	1.00	.05	1.33	.07
Cultivator	4-row	.36	3.35	1.21	3.35	1.21	5.00	1.80	5.00	1.80	4.00	1.44
Vegetable planter, shaper	2-bed	.29	.66	.19	.66	.19	1.33	.39	1.00	.29	1.17	.34
Fertilizer distributor	4-row	.37	.50	.18	.50	.18	--	--	.83	.31	1.33	.49
Duster	4-row	.98	--	--	--	--	--	--	--	--	2.00	1.96
Sprayer	4-row	custom	--	--	--	--	.58	custom	--	--	--	--
Cauliflower marker		.29	--	--	--	--	--	--	--	--	.50	.14
Cauliflower cart		.36	--	--	--	--	--	--	--	--	6.95	2.50
Total				5.02		5.02		11.13		5.02		10.14
Cost per acre												
Production				191.72		197.16		215.00		207.82		237.32
Harvesting and marketing				204.96		261.08		551.13		277.68		370.22
Total				396.68		458.24		766.13		485.50		607.54
Cost per yield-unit				2.36		2.14		2.76		3.11		1.40

a/ Based on following yields per acre for entries affected by yields; in crates Spring Lettuce 168, Summer and Fall lettuce 214, carrots 278, broccoli 156, cauliflower 433.
b/ Weeding done with oil.
c/ Direct field seeded.
d/ Cost of harvest labor included in per crate fee.
e/ Based on usual rent $50 per acre, less real estate taxes; corrected for double cropping.
f/ Calculated at 10% on total of labor, irrigation, power, and equipment.
g/ Calculated at 15% of ranch labor plus 10 cents per hour on preharvest contract labor.

Labor organization per farm was determined for each of the subarea size units according to the total labor required for all crops grown. Three employment bases are used for labor used in producing the various crops; regular full-time workers hired on a year-round basis, the same on a part-year basis, and contract workers. The requirements per farm unit studied, according to these classifications, are as follows (harvesting and packing labor not included):

Subarea I farms	220 crop acres	340 crop acres	500 crop acres
Full-time men	3	4	6
Part-time men	--	6 months	--
Contract labor	485 days	740 days	1,235 days

Subarea II farms	150 crop acres	240 crop acres	320 crop acres
Full-time men	1	2	3
Part-time men	6 months	9 months	--
Contract labor	300 days	435 days	275 days

Most of this labor represents a cash cost to the operator; it is hired. The operator can perform a part of the field operations on the smaller farms, but his full time is required to supervise and manage on the larger units. In addition, the organization with 500 crop acres requires a full-time foreman (not included in the summary above). Adequate supplies of contract labor usually are available in the area so that it is unnecessary to provide regular employment for any personnel other than that indicated as required for daily operations on a year-round basis.

Labor costs are presented for the individual crops studied according to the labor inputs in hours at the going rates of pay (Tables 20, 23, 24, and 27). These rates for tractor drivers, irrigators, and contract labor are applied to the inputs according to operation, regardless of the source of the labor. Thus, operator's labor on a small farm is charged for at the same rate as the employee if he supplied a portion of the labor in production operations. Such procedure is necessary in arriving at comparable costs among the various farming units.

Appropriate means of recognizing the effect of this situation on final earnings of the operator will be made in the later report that deals with total farm operations and returns.

Typical Production and Marketing Costs Per Acre for Six Farm Organizations

The previous sections include data showing (1) six typical crop enterprise organizations, (2) annual costs for capital goods and prices for materials and services used in production, (3) total power, machinery, and irrigation water inputs by crop enterprises, and (4) annual costs per hour or per acre-foot for these latter productive services. The input information is classified according to three farm organizations in each of two subareas of Santa Maria and adjacent truck crop areas. Cost and price data are shown for two periods--1947-1949 and 1950-1952. The foregoing basic data are used in this section to determine typical costs per acre for producing the four chief vegetable crops--lettuce, carrots, broccoli, and cauliflower--and the more commonly grown rotation crops under both sets of price conditions. The word, "typical," connotes merely that the data presented represent most common practices and inputs under the prices, natural conditions, and technology specified for the farm organizations presented. Wide variation exists among vegetable growers, therefore, in the amount of labor, power, and other equipment used in producing each of the crops grown. Actually, a wide range exists among growers in the specific combination of practices used. Many factors vary among farms, and most individual farm organizations would differ in some respect from the data presented.

Even if complete uniformity in practices and inputs were assumed, however, costs per acre or per unit of product necessarily must vary according to prices. Such is demonstrated clearly by determining costs under differing price conditions. Still different production costs would result if another price context

appropriate means of recognizing the effect of this situation on final earnings of the operator will be made in the later report that deals with total farm operations and returns.

Typical Production and Marketing Costs per Acre for Farm Organizations

The previous sections include data showing (1) six typical crop enterprise organizations, (2) annual costs for capital goods and prices for materials and services used in production, (3) total power, machinery, and irrigation water inputs by crop enterprises, and (4) annual costs per hour or per acre-foot for these latter productive services. The input information is classified according to three farm organizations in each of two sections of Santa Maria and adjacent truck areas. Cost and price data are shown for two periods--1947-1949 and 1950-1952. The foregoing basic data are used in this section to determine typical costs per acre for producing the four chief vegetable crops--lettuce, carrots, broccoli, and cauliflower--and the more common grown rotation crops under both sets of price conditions. The word, "typical," connotes merely that the data presented represent most common practices and inputs under the prices, natural conditions, and technology specified for the farm organizations presented. Wide variation exists among vegetable growers, therefore, in the amount of labor, power, and other equipment used in producing each of the crops grown. Actually, a wide range exists among growers in the specific combination of practices used. Many factors vary among farms, and most individual farm organizations would differ in some respect from this data presented.

Costs per acre or per unit of product necessarily must vary according to prices. Such is demonstrated clearly by

were used. Cost data presented, therefore, are typical only of the two periods examined. The overhead cost information presented is classified according to the three organizations studied within each of the subareas. Individual cost items for production, harvesting, and marketing are classified according to kinds of inputs and are listed for the four principal vegetable crops and the more commonly grown rotation crops. Certain costs per acre are constant for all farm organizations within a given subarea due to the mechanics of the analysis. The tables have been arranged so that these data are presented in the forepart of the table for the first farm organization presented in each subarea. Detailed information is omitted where it is the same for the other two farm organizations in each subarea. Detailed tables for only one-crop-acre farm size in each subarea are included here. Summary data for remaining farms in each subarea, also, are presented. This analysis is concerned primarily with farm organization and production costs. The input and cost data are classified initially, therefore, as farm labor, contract services, materials, miscellaneous, irrigation, power, and equipment. Contract services and materials both are further subclassified as production or harvesting and marketing. The charge for use of land is calculated as rent of $65 per farm land acre, including taxes, in Subarea I and $50 in Subarea II. This amount was prorated among crop acres according to the acres double cropped and the cost of taxes shown separately. It is recognized that this method does not reflect precisely variations among farms in the subareas. It does have the advantage, however, of being based on established practices and rates in the Santa Maria area at the time the interviews were made.

Harvesting and local marketing costs are calculated according to typical yields per acre for the various crops in the two subareas. It is necessary to include this information under this grouping because harvesting is inseparable from the local marketing process for most vegetable crops. Yields used for the vegetables reflect the fact that market conditions usually limit the quantity of

a given crop harvested per acre to less than the potential physical yield of marketable produce. No charge is made for management in calculating these costs. This factor was left for consideration when earnings are analyzed. A charge for a foreman was included for the 500-crop-acre unit in Subarea I; the size of business requires his services.

Subarea I Farms

220-Crop-Acre Farm; 1950-1952 Prices.--This setup includes spring lettuce, summer or fall lettuce, carrots, broccoli, cauliflower, and fresh tomatoes. It totals 223 acres of crops and 142 acres in physical area, of which 93 acres is double cropped (Table 4).

Total production, plus harvesting and marketing, costs per crop acre at 1950-1952 prices range from $397 for spring lettuce to $766 for carrots (Table 20). Harvesting and marketing costs exceed production costs for every vegetable crop and are more than double the latter figure for carrots. Harvesting and marketing costs range from $205 for spring lettuce to $551 for carrots. Production costs vary much less from $192 for spring lettuce to $237 for cauliflower. Harvesting and marketing costs, therefore, are responsible for most of the relatively wide range in typical total costs per acre for vegetable production and local marketing as well as for over half of these totals. Harvesting and marketing costs as used in this report include all harvesting, packing, local transportation services, and materials used to get the product into trade channels at the point nearest the producer's farm. Harvesting costs are not included under production in order to keep the data comparable. This operation is never performed by the farmer for some crops, and any given individual may not harvest any of his vegetable crops. Harvesting and local transportation combined accounted for most of the cost of contract services for all vegetables (Table 20). Materials, including containers, lids, liners, and other packing materials--ice where applicable--range in cost per acre from $99 for spring lettuce to $249 for carrots.

a given crop harvested per acre to less than the potential physical yield of marketable produce. No change is made for management in calculating these costs. This factor was dealt for consideration when earnings are analyzed: A charge for a foreman was included for the 500-crop-acre unit in Subarea I; the rate of

Four classes of inputs account for 70-80 per cent of total production costs per acre for the four principal vegetable crops at 1950-1952 prices. These are, using summer and fall lettuce as an example: farm labor--$30.64; contract service--$29.38; materials--$41.92; and miscellaneous--$45.85 (Table 20). If the cost of contract services, largely labor cost, is combined with farm labor for lettuce, the total--$60.02--represents 30 per cent of all production costs (Table 21). Power, irrigation, and equipment costs rank fifth, sixth, and seventh, respectively. The items combined account for 20 per cent of all production costs for summer and fall lettuce on the 220-crop-acre farm in Subarea I at 1950-1952 prices.

These same relationships hold in general for the chief vegetable crops in this subarea size setup. Carrots and cauliflower a slightly smaller proportion of total production costs in the four input classes that dominate costs but a slightly greater proportion included under power.

The miscellaneous class deserves comment. Included here are charges for using land plus general and labor overhead. The general overhead, $7.04 for summer lettuce, is intended to cover cost of improvements and other over-all services not specifically covered otherwise. Labor overhead is included to represent labor expense for the entire farm not effectively used on any one specific crop.

340- and 500-Crop-Acre Farms; 1950-1952 Prices.--Production costs in this analysis are lowest on 340-acre farms and highest on 500-acre farms for all crops except cauliflower. There are virtually no cost differences between the 220-acre and 500-acre farms (Table 22). Variations found reflect cost differences in irrigation, equipment, and miscellaneous inputs primarily. Power costs are slightly higher on the middle-sized farms, while farm labor, contract services, and materials are the same for all farm sizes. These data indicate no consistent relationship between farm scale and per-acre production cost for vegetables.

TABLE 21

Percentage Importance Various Classes of Inputs in Relationship to Total Production Costs Per Acre; 220 Crop Acre Farm in Subarea I, Santa Maria and Adjacent Truck Crop Areas, 1947-1949 and 1950-1952 a/

Item	Lettuce				Carrots		Broccoli		Cauliflower	
	Spring		Summer or fall							
	1947-1949	1950-1952	1947-1949	1950-1952	1947-1949	1950-1952	1947-1949	1950-1952	1947-1949	1950-1952
1	2	3	4	5	6	7	8	9	10	11
	dollars									
Total cost	177.48	191.72	182.56	197.16	192.46	215.00	190.87	207.82	216.70	237.32
	percentages									
Ranch labor	14.6	16.0	14.2	15.5	15.6	16.5	15.3	16.6	18.3	19.7
Contract service (production)	16.2	15.3	15.7	14.9	7.9	8.1	12.7	12.1	4.1	4.7
Materials (production)	21.8	21.9	21.2	21.3	24.3	24.5	23.5	23.7	25.3	23.0
Miscellaneous	30.0	28.7	29.5	28.1	28.6	26.5	29.0	27.4	26.7	25.5
Irrigation	5.0	4.9	7.4	7.3	5.9	5.6	7.7	7.6	9.1	8.9
Power	9.8	10.6	9.5	10.3	12.9	13.6	9.4	10.2	12.9	13.9
Equipment	2.6	2.6	2.5	2.6	4.8	5.2	2.4	2.4	3.6	4.3
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

a/ See Table 20 for detailed classification of per acre dollar costs.

TABLE 22

Typical Per Acre Production Costs by Crops and Input Classes on Vegetable Farms in Santa Maria and Adjacent Truck Crop Areas, Subarea I, 1947-1949 and 1950-1952

Size of farm	Ranch labor		Contract service production		Materials production		Miscellaneous		Irrigation		Power		Equipment		Total	
	1947 1949	1950 1952	1947 1949	1950 1952	1947 1949	1950 1952	1947 1949	1950 1952	1947 1949	1950 1952	1947 1949	1950 1952	1947 1949	1950 1952	1947 1949	1950 1952
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	dollars															
Lettuce (summer and fall)																
220 acres	25.93	30.64	28.71	29.38	38.78	41.92	53.78	55.41	13.44	14.40	17.33	20.39	4.59	5.02	182.56	197.16
340 acres	25.93	30.64	28.71	29.38	38.78	41.92	51.16	52.80	10.33	11.29	18.54	21.75	4.28	4.77	177.73	192.55
500 acres	25.93	30.64	28.71	29.38	38.78	41.92	60.56	62.39	10.66	11.62	18.52	21.75	4.52	4.94	187.68	202.64
Broccoli																
220 acres	29.20	34.49	24.22	25.12	44.84	49.20	55.27	57.06	14.70	15.75	18.05	21.18	4.59	5.02	190.87	207.82
340 acres	29.20	34.49	24.22	25.12	44.84	49.20	52.54	54.31	11.29	12.34	18.69	21.85	4.00	4.32	184.78	201.63
500 acres	29.20	34.49	24.22	25.12	44.84	49.20	61.92	63.88	11.65	12.70	18.52	21.69	4.11	4.41	194.46	211.49
Carrots																
220 acres	29.98	35.41	15.23	17.38	46.88	52.70	54.99	57.06	11.34	12.15	24.79	29.17	9.25	11.13	192.46	215.00
340 acres	29.98	35.41	15.23	17.38	46.88	52.70	52.54	54.63	8.73	9.54	25.43	29.79	10.63	12.83	189.42	212.28
500 acres	29.98	35.41	15.23	17.38	46.88	52.70	61.67	63.88	9.01	9.82	25.11	29.48	8.48	9.97	196.36	218.64
Cauliflower																
220 acres	39.50	46.67	8.88	11.28	54.88	54.51	57.93	60.61	19.74	21.15	28.02	32.96	7.75	10.14	216.70	237.32
340 acres	39.50	46.67	8.88	11.28	54.88	54.51	54.98	57.59	15.13	16.54	28.24	33.04	6.58	8.59	208.19	228.22
500 acres	39.50	46.67	8.88	11.28	54.88	54.51	64.34	65.80	15.61	17.02	27.73	32.55	6.77	9.38	217.71	237.21

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Labor (farm and contract), miscellaneous, and materials make up approximately 80 per cent of total production costs per acre for all crops except cauliflower at 1950-1952 prices (Table 21). This same group of inputs is responsible for about 70 per cent of these costs for cauliflower. For most crops, the two labor items represent roughly 30 per cent of total production costs with materials and miscellaneous each accounting for about 25 per cent.

Rotation Crops on 220- and 500-Crop-Acre Farms; 1950-1952 Prices.--These two farm organizations in Subarea I include rotation crops--fresh market tomatoes on the 220 and sugar beets on the 500-acre farms. Total production, plus harvesting and marketing, costs per acre at 1950-1952 prices are $484 for tomatoes and $238 for sugar beets (Table 23). As for the chief vegetable crops, harvesting and marketing costs exceed production costs for tomatoes--$273 versus $210 per acre. The reverse is true for sugar beets for which production costs total $190 and harvesting and marketing costs total $48 per acre. Tomato exceeds sugar beet production costs for farm labor, materials, and irrigation. The latter crop has the greater per-acre cost for contract services, miscellaneous, power, and equipment (Table 23).

Price Changes and Production Costs in Subarea I.--The rise in price level between the 1947-1949 and 1950-1952 periods increased typical production costs per acre in proportion ranging from about 7 per cent for cauliflower to 12 per cent for carrots (Table 22). The inputs whose costs reacted most sharply to the price rise included farm labor, power, and materials. These three classes of inputs accounted for nearly $11 of a $15 total increase in production costs per acre for lettuce grown on the 220-crop-acre farm.

The price change, also, raised the cost of producing rotation crops. Tomato production costs per acre increased from $185 in 1947-1949 to $210 in 1950-1952. The rise for sugar beets was from $176-$190.

labor (farm and contract), miscellaneous, and materials make up approximately
about 75 per cent of these costs for cauliflower. For most crops, the two labor
miscellaneous each accounting for about 25 per cent.

the 220 and super beets on the 500-acre farms. Total production plus harvesting
and marketing costs per acre at 1950-1952 prices are $85 for tomatoes and $100
costs for farm labor, materials, and irrigation. The latter crop has the greater

per acre in proportion resting from about 7 per cent for cauliflower to 12 per
cent for carrots (Table 22). The inputs whose costs reached most sharply to the
price rise included farm labor, power, and materials. These three classes of in-
puts accounted for nearly 3/4 of a 9% total increase in production costs per acre
for lettuce grown on the 220-crop-acre farm.

The price change, also, raised the cost of producing rotation crops. Tomato

TABLE 23

Typical Per Acre Inputs and Costs for Rotation Crops;
220 and 500 Crop Acre Vegetable Farms in Subarea I,
Santa Maria and Adjacent Crop Truck Areas, 1950-1952[a]/

Item	Unit	Price or cost	220 acres Tomatoes		500 acres Sugar beets	
			Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7
Ranch labor						
Tractor driver	hour	1.00	20.9	20.90	13.9	13.90
Irrigator	hour	1.00	12.0	12.00	12.0	12.00
Compensation Insurance	$100	1.45	--	.48	--	.38
Total				33.38		26.28
Contract services						
Pre-harvest labor:						
Hoe hand	hour	.80	20.0	16.00	32.0	25.60
Harvest labor:						
Harvester	hour	--	(50.0)	--	(27.0)	--
Lidder		--	--	--	--	--
Loader	hour	--	(10.0)	--	--	--
Truck driver	hour	--	(5.0)	--	(2.7)	--
Foreman		--	--	--	--	--
Soil fumigation:						
Dusting, air	acre	2.40	3 times	7.20	--	--
Total production				23.20		25.60
Miscellaneous services	container		210	33.60	--	--
Harvest, pack, load	container		210	88.20	18 Ton	28.80
Hauling (local)	container		210	16.80	18 Ton	18.90
Total harvesting and marketing				138.60		47.70
Total contract services				161.80		73.30
Materials						
Production:						
Seed	lb. or unit		2,000	20.00	4.0	2.06
Fertilizer:						
10-10-5	lb.	.035	800	28.00	600	21.00
NH_3	lb.	.115	--	--	75	8.62
Sprays and dusts:						
DDT5Zn3 Parathion 2	lb.	.14	120	16.80	--	--
DDT (10%)	lb.	.10	--	--	30	3.00
DDT Sulfur		--	--	--	--	--
Nicotine 10-F		--	--	--	--	--
Stove oil		--	--	--	--	--
Sulfur		--	--	--	--	--
Semasin		--	--	--	--	--
Total production				64.80		34.68

(Continued on next page.)

Item	Unit	Price or cost	220 acres Tomatoes		500 acres Sugar beets	
			Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7
Marketing						
Containers	one	--	210	84.00	--	--
Lids	one	--	210	12.60	--	--
Liners	crate	--	210	37.80	--	--
Ice		--	--	--	--	--
Bags		--	--	--	--	--
Total marketing				134.40		
Total materials				199.20		34.68
Miscellaneous						
Real Estate tax	acre	--	1	7.53	1	7.60
Real Estate investment [b]	acre	--	1	33.88	1	34.19
Insurance	$100	--	--	--	--	--
Foreman	hour	1.35	--	--	5	6.75
General overhead [c]		--	--	6.74	--	6.76
Labor overhead [d]		--	--	7.00	--	7.14
Total				55.15		62.44
Irrigation						
Concrete pipe		--	--	.10	--	.11
Siphons		--	--	.34	--	.35
Water	acre inch	varies	30	13.50	30	10.80
Total				13.94		11.26
Power						
T-4 tractor	hour	varies	4.9	8.67	5.1	10.91
W-2 tractor	hour	varies	.3	.38	7.3	7.96
Pickup truck		--	--	2.73	--	2.73
1-1/2 ton truck		--	--	1.92	--	1.92
Total				13.70		23.52

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Item	Unit	220 acres Tomatoes			500 acres Sugar beets		
		Price or cost	Number or amount	Cost	Price or cost	Number or amount	Cost
1	2	3	4	5	6	7	8
Equipment							
Tool carrier	4-row	.49	1.08	.53	.42	4.25	1.78
Ditcher	42 inch	.25	.50	.12	.11	.50	.06
Lister	3-row	.29	.58	.17	.25	.58	.14
Lifter	2-row	--	--	--	.08	2.50	.20
Chisel	3-row	--	--	--	.61	.67	.41
Plow	4-14 inch	.56	1.00	.56	.49	1.00	.49
Disc harrow	10½ foot	.58	1.50	.87	.85	1.00	.85
Spike harrow	4-5 foot	.12	1.50	.18	.12	1.00	.12
Roller	10 foot	--	--	--	.26	.50	.13
Float	10 foot	.05	1.33	.07	.04	1.33	.05
Cultivator	4-row	.36	3.00	1.08	.24	3.34	.80
Vegetable planter, shaper	2-bed	.29	.30	.09	.27	.30	.08
Beet and bean planter	4-row	--	--	--	1.29	.80	1.03
Fertilizer distributor	4-row	.37	2.00	.74	.34	1.33	.45
Duster	4-row	.98	2.00	1.96	.66	--	--
Sprayer	4-row		custom		--	--	--
Total equipment				6.37			6.59
Cost per Acre							
Production Costs				210.54			190.37
Marketing Costs				273.00			47.70
Total				483.54			238.07
Cost per yield unit				2.30			13.22

a/ Based on following yields per acre for entries affected by yields; in crates, tomatoes 210, in tons, sugar beets 18.

b/ Based on usual rent $50 per acre, less real estate taxes; corrected for double cropping.

c/ Calculated at 10% on total of labor, irrigation, power, and equipment.

d/ Calculated at 15% of ranch labor, plus 10 cents per hour on pre-harvest contract labor.

Subarea II Farms

240-Crop-Acre Farm; 1950-1952 Prices.--This subarea size organization includes 240 acres of crops. Actual land area is only 156 acres; 100 acres, thus, is double cropped. Spring lettuce, summer or fall lettuce, broccoli, and cauliflower are the principal vegetable crops. In addition, this setup includes 45 acres of small white beans and 63 acres of potatoes (Table 5). Total production, plus harvesting and marketing, costs range from $372 per acre for spring lettuce to $510 for cauliflower (Table 24). Harvesting and marketing costs exceed those for producing every crop except spring lettuce; they range from $182 for this crop to $274 for cauliflower. The range in production costs is from $190 for spring lettuce to $236 for cauliflower. This represents, as in Subarea I, a much narrower cost range than for harvesting and marketing services.

The same four input classes that dominated production costs per acre in Subarea I, also, are responsible for 75 per cent of the total production costs for summer or fall lettuce on the 240-acre farm in Subarea II (Table 25). This relationship, also, holds for the other important vegetables. Farm labor, plus contract services (chiefly labor), accounts for a range of 23 per cent of total production costs for carrots up to 31 per cent for summer and fall lettuce.

150- and 320-Crop-Acre Farms; 1950-1952 Prices.--Production costs for summer and fall lettuce and broccoli are lowest on the 240-crop-acre farms and highest on the 320-crop-acre farms (Table 26). Cauliflower costs per acre, also, are lowest on the 240-crop-acre farms but are highest on the 150-crop-acre farm. This relationship reflects the relatively small acreage of this crop on the smallest farm and the associated high cost per hour for equipment use. No cost comparisons are possible for carrots, inasmuch as only the 320-acre farm produced this crop.

Among the various input classes, equipment cost for lettuce and broccoli is the only one to show clear-cut scale advantages. Here, there is an inverse

Among the various input classes, equipment cost for lettuce and broccoli is the only one to show clear-cut scale advantages. Here, there is an inverse

TABLE 24

Typical Per Acre Inputs and Costs by Crops; 240 Crop Acre Vegetable Farm in Subarea II, Santa Maria and Adjacent Truck Crop Areas, 1950-1952 a/

Item	Unit	Price or cost	Lettuce				Broccoli		Cauliflower b/	
			Spring		Summer or fall					
			Number or amount	Cost	Number or amount	Cost	Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7	8	9	10	11
		dollars		dollars		dollars		dollars		dollars
Ranch labor		--	--	30.64	--	30.64	--	34.49	--	46.67
Contract services										
Production		--	--	29.38	--	29.38	--	25.12	--	11.28
Harvesting, marketing		--	--	81.20	--	104.64	--	130.95	--	121.60
Total contract service				110.58		134.02		156.07		132.88
Materials										
Production		--	--	41.92	--	41.92	--	49.20	--	54.51
Harvesting, marketing		--	--	100.58	--	129.60	--	109.34	--	152.00
Total materials				142.50		171.52		158.54		206.51
Miscellaneous										
Real Estate tax	acre	--	1	5.47	1	5.47	1	5.47	1	5.47
Real Estate investment c/	acre	--	1	23.43	1	23.43	1	23.43	1	23.43
Insurance	$100									
General overhead d/		--	--	7.55	--	7.99	--	8.40	--	12.15
Labor overhead e/		--	--	6.96	--	6.96	--	8.01	--	8.11
Total				43.41		43.85		45.31		49.16
Irrigation										
Concrete pipe		--	--	.07	--	.07	--	.07	--	.07
Siphon		--	--	.49	--	.49	--	.49	--	.49
Water	acre inch	.40	20	8.00	31	12.40	34	13.60	46	18.40
Total				8.56		12.96		14.16		18.96
Power										
T-4 tractor	hour	3.21	5.7	18.30	5.7	18.30	4.5	14.44	5.7	18.30
W-2 tractor	hour	1.57	4.5	7.06	4.5	7.06	6.8	10.68	13.0	20.41
Pickup truck		--	--	2.87	--	2.87	--	2.87	--	2.87
1 1/2 ton truck		--	--	1.92	--	1.92	--	1.92	--	1.92
Total				30.15		30.15		29.91		43.50

(Continued on next page.)

Table 24 continued.

Item	Unit	Price or cost	Lettuce				Broccoli		Cauliflower	
			Spring		Summer or fall					
			Number or amount	Cost	Number or amount	Cost	Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7	8	9	10	11
		dollars		dollars		dollars		dollars		dollars
Equipment										
Tool carrier	4-row	.86	1.08	.93	1.08	.93	.87	.75	1.17	1.00
Bean cutter		.47	--	--	--	--	--	--	--	--
Ditcher	42 inch	.23	.50	.12	.50	.12	.50	.12	.50	.12
Lister	3-row	.21	.58	.12	.58	.12	.37	.08	.67	.14
Lifter		--	--	--	--	--	--	--	--	--
Plow	4-14 inch	.82	1.00	.82	1.00	.82	1.00	.82	1.25	1.02
Disc harrow	10 1/2 foot	.79	2.50	1.98	2.50	1.98	1.64	1.30	1.92	1.52
Spike harrow	4-5 foot	.31	1.50	.46	1.50	.46	.64	.20	.67	.21
Roller	10 foot	.39	1.16	.45	1.16	.45	1.00	.39	1.33	.52
Float	10 foot	.07	1.16	.08	1.16	.08	1.00	.07	1.33	.09
Cultivator	4-row	.22	3.35	.74	3.35	.74	5.00	1.10	4.00	.88
Potato planter		15.56	--	--	--	--	--	--	--	--
Vegetable planter, 2-bed shaper		.37	.66	.24	.66	.24	1.00	.37	1.17	.43
Beet, bean planter		4.68	--	--	--	--	--	--	--	--
Fertilizer distributor	4-row	.43	.50	.22	.50	.22	--	--	1.33	.57
Duster	4-row	1.20	--	--	--	--	--	--	2.00	2.40
Cauliflower marker		.20	--	--	--	--	--	--	.50	.10
Cauliflower cart		.60	--	--	--	--	--	--	5.60	3.36
Broadcaster	4-row	.31	--	--	--	--	.83	.26	--	--
Total				6.16		6.16		5.46		12.36
Cost per acre										
Production				190.22		195.06		203.65		236.44
Harvesting and marketing				181.78		234.24		240.29		273.60
Total				372.00		429.30		443.94		510.04
Cost per yield unit				2.50		2.24		3.29		1.59

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Table 24 continued.

a/ Based on following yields per acre for entries affected by yields; in crates spring lettuce 149, summer or fall lettuce 192, broccoli 135, cauliflower 320.

b/ Direct field seeded.

c/ Based on usual rent $50 per acre, less real estate taxes; corrected for double cropping.

d/ Calculated at 10% on total of labor, irrigation, power, and equipment.

e/ Calculated at 15% of ranch labor plus 10 cents per hour on pre-harvest labor.

TABLE 25

Percentage Importance Various Classes of Inputs in Relationship to Total Production Costs Per Acre; 240 Crop Acre Farm in Subarea II, Santa Maria and Adjacent Truck Crop Areas, 1947-1949 and 1950-1952[a]

	Lettuce				Carrots[b]		Broccoli		Cauliflower	
	Spring		Summer or Fall							
	1947-1949	1950-1952	1947-1949	1950-1952	1947-1949	1950-1952	1947-1949	1950-1952	1947-1949	1950-1952
1	2	3	4	5	6	7	8	9	10	11
	dollars									
Total cost	177.85	190.22	182.21	195.06	197.65	224.73	188.82	203.65	216.82	236.44
	percentages									
Ranch labor	14.58	16.11	14.23	15.71	14.65	15.22	15.46	16.94	18.22	19.74
Contract service (production)	16.14	15.44	15.76	15.06	7.70	7.73	12.83	12.33	4.10	4.77
Materials (production)	21.81	22.04	21.28	21.49	23.68	23.45	23.75	24.16	25.31	23.05
Miscellaneous	25.45	22.82	25.06	22.48	27.87	26.80	24.89	22.25	22.99	20.79
Irrigation	4.36	4.50	6.43	6.64	5.08	5.07	6.78	6.95	7.90	8.02
Power	14.57	15.85	14.22	15.46	15.16	15.55	13.63	14.69	17.33	18.40
Equipment	3.09	3.24	3.02	3.16	5.86	6.18	2.66	2.68	4.15	5.23
	100	100	100	100	100	100	100	100	100	100

a/ See Table 24 for detailed classification of per acre dollar costs.

b/ Carrots figured at 320 crop acre farm.

TABLE 26

Typical Per Acre Production Costs by Crops and Input Classes on Vegetable Farms in Santa Maria and Adjacent Truck Crop Areas, Subarea II, 1947-1949 and 1950-1952

Size of farm	Ranch labor		Contract service production		Materials production		Miscellaneous		Irrigation		Power		Equipment		Total	
	1947-1949	1950-1952	1947-1949	1950-1952	1947-1949	1950-1952	1947-1949	1950-1952	1947-1949	1950-1952	1947-1949	1950-1952	1947-1949	1950-1952	1947-1949	1950-1952
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	dollars															
Lettuce (summer and fall)																
150 acres	25.93	30.64	28.71	29.38	38.78	41.92	45.73	47.45	10.28	11.28	24.59	28.68	8.27	8.75	182.29	198.10
240 acres	25.93	30.64	28.71	29.38	38.78	41.92	45.66	43.85	11.72	12.96	25.91	30.15	5.50	6.16	182.21	195.06
320 acres	25.93	30.64	28.71	29.38	38.78	41.92	53.97	58.70	11.90	13.50	23.16	26.99	4.95	5.23	187.40	206.36
Broccoli																
150 acres	29.20	34.49	24.22	25.12	44.84	49.20	46.92	48.74	8.11	8.90	25.95	30.16	8.08	8.26	187.32	204.87
240 acres	29.20	34.49	24.22	25.12	44.84	49.20	47.00	45.31	12.80	14.16	25.73	29.91	5.03	5.46	188.82	203.65
320 acres	29.20	34.49	24.22	25.12	44.84	49.20	55.38	60.23	13.01	14.76	23.25	27.06	4.83	4.94	194.73	215.80
Carrots																
320 acres	28.95	34.19	15.23	17.38	46.80	52.70	55.08	60.23	10.05	11.40	29.96	34.95	11.58	13.88	197.65	224.73
Cauliflower																
150 acres	39.50	46.67	8.88	11.28	54.88	54.51	51.11	54.32	14.93	16.38	39.30	45.68	21.39	27.87	229.99	256.71
240 acres	39.50	46.67	8.88	11.28	54.88	54.51	49.85	49.16	17.12	18.96	37.58	43.50	9.01	12.36	216.82	236.44
320 acres	39.50	46.67	8.88	11.28	54.88	54.51	58.22	64.20	17.45	19.80	33.19	38.72	10.48	14.73	222.60	249.91

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relationship between farm size and cost per acre. Power shows a similar relationship for broccoli and cauliflower but, for lettuce, only when comparing the two larger farms (Table 26). The relationship is just the opposite for irrigation for all three crops. These data reflect the difficulties in adjusting fixed capacities of power and irrigation equipment to variation in scale of farm operation.

Rotation Crops on 150-, 240-, and 320-Crop-Acre Farms at 1950-1952 Prices.--Small white beans and potatoes were the two most important rotation crops in Subarea II. Beans were grown on 23, 45, and 132 acres, respectively, for the three farm sizes and on 47 and 63 acres of the 150- and 240-acre farms (Table 5). Beans require relatively little irrigation water--14 inches according to data from this study. Potatoes require more but over a period that permits considerable flexibility in managing farm water supplies. These reasons have much to do with the importance of these rotation crops in Subarea II.

Total per-acre production, plus harvesting and marketing, costs for beans are $126 on the 240-crop-acre farms, $137 and $136 on the 150- and 320-crop-acre farms, respectively (Table 27). Harvesting and marketing costs at $19.50 represent a small fraction of this cost. Production costs range from $107-$117 per acre.

Total per-acre costs for potatoes are $398 on the 240-crop-acre farms and $404 on the 150-crop-acre farm. Harvesting and marketing costs represent $152 of this total on each farm size (Table 27). The difference between per-acre production costs of $252 and $246 on the 150- and 240-crop-acre farms is explained largely by more efficient equipment use on the larger farm.

Price Changes and Production Costs in Subarea II.--Per-acre production cost increases of 8-9 per cent, according to crops on the 240-acre farm, accompanied the price level increases between 1947-1949 and 1950-1952 (Table 26). Similar percentage increases occurred on the other two size groups except that the amount of increase was slightly greater for cauliflower.

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nants of power and irrigation equipment to variation in acre of farm opera-

for all three crops. These data reflect the difficulties in adjusting fixed ca-

ship for broccoli and cauliflower but, for lettuce, only when comparing the two

relationship between farm size and cost per acre. Power shows a smaller relation-

TABLE 27

Typical Per Acre Inputs and Costs for Rotation Crops; Vegetable Farms in Subarea II, Santa Maria and Adjacent Truck Crop Areas, 1950-1952a/

Item	Unit	Price or cost	150 acres				240 acres				320 acres	
			Dry Beans		Potatoes		Dry Beans		Potatoes		Dry Beans	
			Number or amount	Cost	Number or amount	Cost	Number or amount	Cost	Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7	8	9	10	11	12	13
		dollars		dollars		dollars		dollars		dollars		dollars
Ranch labor												
Tractor driver	hour	1.00	9.0	9.00	16.4	16.40	9.0	9.00	16.4	16.40	9.0	9.00
Irrigator	hour	1.00	9.0	9.00	13.5	13.50	9.0	9.00	13.5	13.50	9.0	9.00
Compensation insurance	$100	1.45		.26		.43		.26		.43		.26
Total				18.26		30.33		18.26		30.33		18.26
Contract service												
Pre-harvest labor:												
Hoe-hand	hour	.80	20.0	16.00	--	--	20.0	16.00	--	--	20.0	16.00
Harvest labor:												
Harvester	hour	--	--	--	(22.5)	--	--	--	(22.5)	--	--	--
Loader	hour	--	(.2)	--	(2.8)	--	(.2)	--	(2.8)	--	(.2)	--
Truck driver	hour	--	(.3)	--	(4.1)	--	(.3)	--	(4.1)	--	(.3)	--
Cut potatoes	cwt.	--	--	--	(12.0)	--	--	--	(12.0)	--	--	--
Soil fumigation		24.30	--	--	--	--	--	--	--	--	--	--
Dusting, air	acre	2.40	--	--	3 times	7.20	--	--	3 times	7.20	--	--
Total production				16.00		7.20		16.00		7.20		16.00
Harvest, pack, load	container		20 cwt	14.00	210 cwt	96.00	20 cwt	14.00	210 cwt	96.00	20 cwt	14.00
Hauling, local	container		20 cwt	1.50	210 cwt	21.00	20 cwt	1.50	210 cwt	21.00	20 cwt	1.50
Total harvesting and marketing				15.50		117.00		15.50		117.00		15.50
Total contract services				31.50		124.20		31.50		124.20		31.50
Materials												
Production:												
Seed	lb. or unit	varies	25	3.00	1,200	72.00	25	3.00	1,200	72.00	25	3.00
Fertilizer:												
10-10-5	lb.	.035	--	--	650	22.75	--	--	650	22.75	--	--
NH_3	lb.	.115	--	--	65	7.48	--	--	65	7.48	--	--

(Continued on next page.)

Imports for home industries and capital goods for manufacturing industry, 1955-56 to 1959-60

(Rupees in crores)

	1955-56	1956-57	1957-58	1958-59	1959-60
Total imports	609.51	645.00	726.00	1,122.00	1,361.00
Capital goods	274.00	300.00	350.00	550.00	650.00
Percentage of capital goods to total imports	45.0	46.5	48.2	49.0	47.8
Imports for home industries	335.51	345.00	376.00	572.00	711.00
Percentage of imports for home industries to total imports	55.0	53.5	51.8	51.0	52.2
Import of capital goods for manufacturing industry	274.00	300.00	350.00	550.00	650.00
Import of capital goods for manufacturing industry as percentage of total imports	45.0	46.5	48.2	49.0	47.8
Import of capital goods for manufacturing industry as percentage of imports for home industries	81.7	87.0	93.1	96.2	91.4

Table 27 continued.

Item	Unit	Price or cost	150 acres Dry Beans Number or amount	150 acres Dry Beans Cost	150 acres Potatoes Number or amount	150 acres Potatoes Cost	240 acres Dry Beans Number or amount	240 acres Dry Beans Cost	240 acres Potatoes Number or amount	240 acres Potatoes Cost	320 acres Dry Beans Number or amount	320 acres Dry Beans Cost
1	2	3	4	5	6	7	8	9	10	11	12	13
		dollars		dollars		dollars		dollars		dollars		dollars
Sprays and dusts:												
DDT5Zn3 Parathion 2	lb.	.14	--	--	105	14.70	--	--	105	14.70	--	--
Semasin	lb.	1.76	--	--	.75	1.32	--	--	.75	1.32	--	--
Total production				3.00		118.25		3.00		118.25		3.00
Marketing												
Bags	cwt.	--	20	4.00	210	34.65	20	4.00	210	34.65	20	4.00
Total marketing				4.00		34.65		4.00		34.65		4.00
Total materials				7.00		152.90		7.00		152.90		7.00
Miscellaneous												
Real Estate tax	acre	--	1	6.16	1	6.16	1	5.47	1	5.47	1	8.34
Real Estate investment [b]	acre	--	1	26.39	1	26.39	1	23.43	1	23.43	1	35.76
Insurance	$100	--	20 cwt	--	--	--	20cwt	--	--	--	20 cwt	--
Storage, beans (3 months)	ton	--	20 cwt	--	--	--	20cwt	--	--	--	20 cwt	--
General overhead [c]		--	--	5.54	--	8.15	--	4.94	--	7.97	--	4.42
Labor overhead [d]		--	--	4.74	--	4.55	--	4.74	--	4.55	--	4.74
Total				42.83		45.25		35.58		41.42		53.26
Irrigation												
Concrete pipe		--	--	.09	--	.09	--	.07	--	.07	--	.08
Siphons		--	--	.65	--	.65	--	.49	--	.49	--	.40
Water	acre inch	(.34 (.40 (.42	14	4.76	30	10.20	14	5.60	30	12.00	14	5.88
Total				5.50		10.94		6.16		12.56		6.36
Power												
T-4 tractor	hour	varies	2.1	5.46	4.1	10.66	2.1	6.74	4.1	13.16	2.1	5.44
W-2 tractor	hour	varies	5.0	10.00	3.3	6.60	5.0	7.85	3.3	5.18	5.0	6.90
Pickup truck		--	--	1.45	--	2.90	--	1.44	--	2.87	--	1.82
1 1/2 ton truck		--	--	.98	--	1.96	--	.96	--	1.92	--	1.19
Total power				17.89		22.12		16.99		23.13		15.35

(Continued on next page.)

(continued on next page)

Table 27 continued.

Item	Unit	Price or cost	150 acres Dry Beans Number or amount	150 acres Dry Beans Cost	150 acres Potatoes Number or amount	150 acres Potatoes Cost	240 acres Dry Beans Number or amount	240 acres Dry Beans Cost	240 acres Potatoes Number or amount	240 acres Potatoes Cost	320 acres Dry Beans Number or amount	320 acres Dry Beans Cost
1	2	3	4	5	6	7	8	9	10	11	12	13
		dollars		dollars		dollars		dollars		dollars		dollars
Equipment												
Tool carrier	4-row	--	1.08	.94	2.38	2.07	1.08	.93	2.38	2.05	1.08	.77
Bean cutter	2-row	--	.70	.55	.25	.20	.70	.33	.25	.12	.70	.16
Ditcher	42 inch	--	.50	.18	.50	.18	.50	.12	.50	.12	.50	.09
Lister	3-row	--	.58	.19	1.08	.36	.58	.12	1.08	.23	.58	.12
Chisel	3-row	--	--	--	.80	.86	--	--	.80	.66	--	--
Plow	4-14 inch	--	--	--	1.00	.99	--	--	1.00	.62	--	--
Disc harrow	10 1/2 foot	--	1.00	1.14	.90	1.03	1.00	.79	.90	.71	1.00	.46
Roller	10 foot	--	--	--	.25	.16	--	--	.25	.10	--	--
Float	10 foot	--	--	--	.31	.03	--	--	.31	.02	--	--
Cultivator	4-row	--	2.40	.96	.50	.20	2.40	.53	.50	.11	2.40	.70
Potato planter	2-row	--	--	--	.40	8.19	--	--	.40	6.22	--	--
Vegetable planter, shaper	2-bed	--	.30	.22	--	--	.30	.11	--	--	.30	.16
Beet,bean planter	4-row	--	.50	4.29	--	--	.50	2.34	--	--	.50	.78
Fertilizer distributor	4-row	--	--	--	.75	.60	--	--	.75	.32	--	--
Potato digger	1-row	--	--	--	.70	3.18	--	--	.70	2.39	--	--
Rake, (sid del.)	8 foot	--	.60	5.32	--	--	.60	2.75	--	--	.60	.94
Total				13.79		18.05		8.02		13.67		4.18
Cost per acre												
Production				117.27		252.14		107.01		246.56		116.41
Harvesting and marketing				19.50		151.65		19.50		151.65		19.50
Total				136.77		403.79		126.51		398.21		135.91
Cost per yield unit				6.84		1.92		6.32		1.90		6.80

a/ Based on following yields per acre for entries affected by yields; in hundredweight, beans 20 cwt., potatoes 210 cwt.

b/ Based on usual rent $50 per acre, less real estate taxes; corrected for double cropping.

c/ Calculated at 10% on total of labor, irrigation, power, and equipment.

d/ Calculated at 15% of ranch labor, plus 10 cents per hour on pre-harvest contract labor.

Conclusions

This study brings together findings regarding typical farm organization, inputs, and costs in producing vegetables for California and eastern markets. Some of the results from the study reflect the organization of production and marketing of these crops. Other findings reflect the methods used to assemble and analyze the data. Some of the more important relationships in each category are considered below.

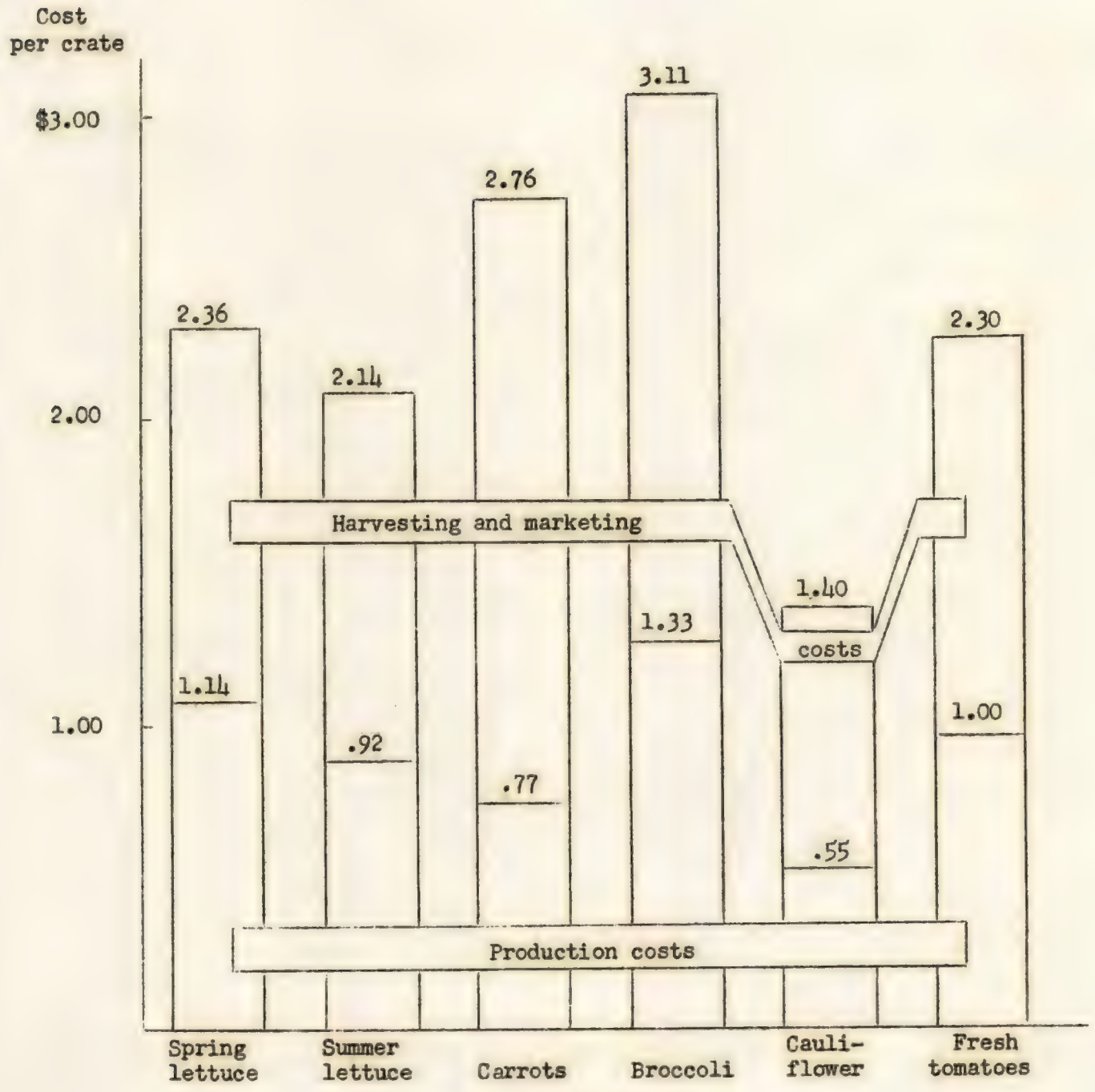
Marketing and Harvesting Requirements Dominate the Cost Picture.--Cost of harvesting, plus packing, and other local services required in selling the crop exceeded total production costs, therefore, represented more than 50 per cent of total costs per container for every vegetable crop studied. Data for the typical 220-crop-acre unit in Subarea I are used to illustrate this relation. Total costs per container range from $1.40 at 1950-1952 prices for cauliflower to $3.11 for broccoli (Figure III). Harvesting and marketing costs are highest actually and percentagewise for carrots; this crop requires for these services $1.98, or 71 per cent of the total cost per container. The lowest cost for these items is for spring lettuce--$1.22 or 52 per cent of the total. This same general relationship holds for all vegetable crops, including tomatoes, produced on each farm crop acre size unit in each of the two subareas. It does not hold for the rotation crops, although marketing costs were only slightly less than production costs for potatoes.

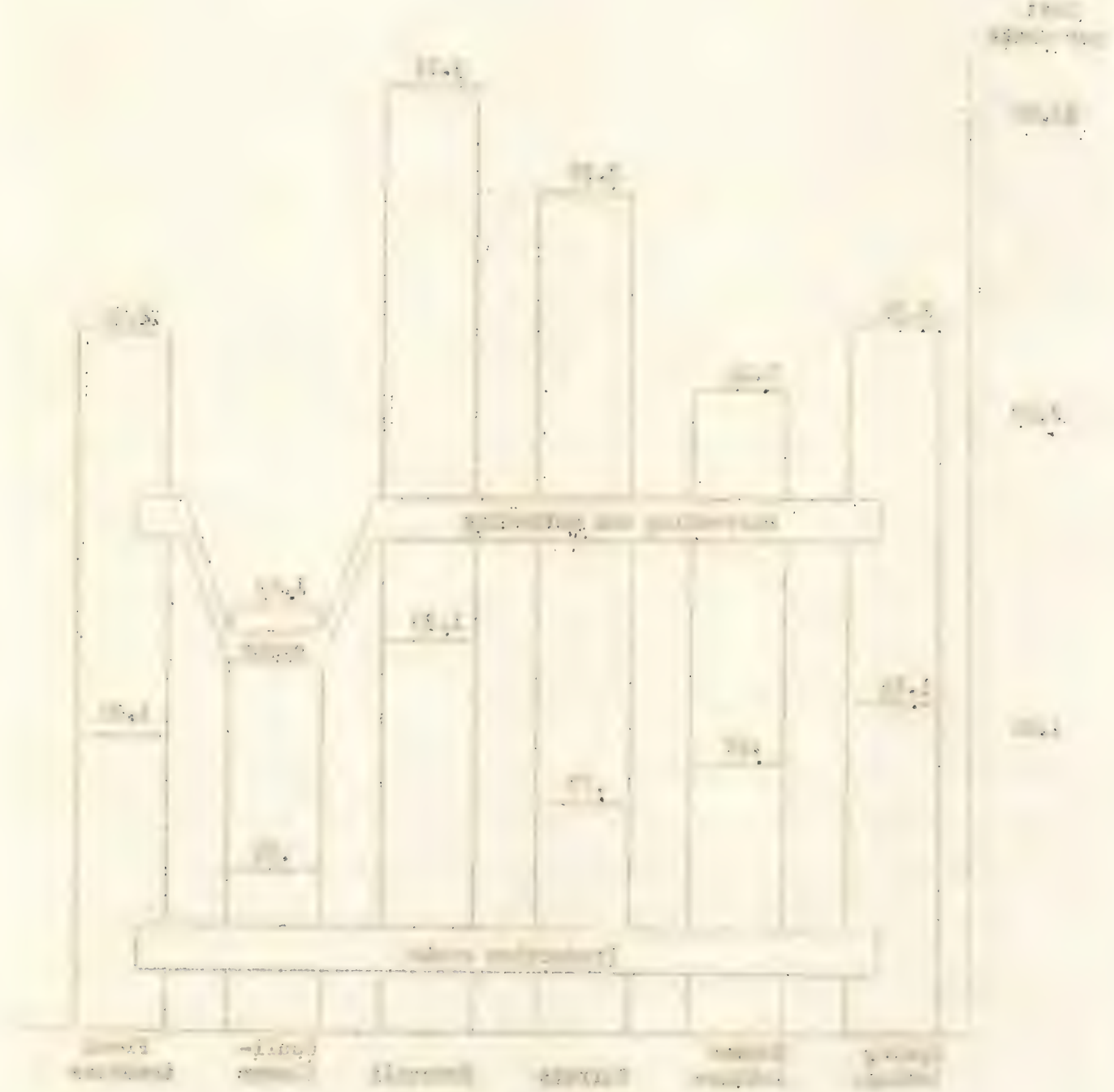
Several important points follow from these facts:

(1) Total costs are relatively high when it is considered that these rates cover only the production and marketing services necessary to put the vegetables in the hands of the local assembler. Transportation to the consumer market and all attendant costs, including those for actual selling, still are to be added before these products move into consumption.

FIGURE III

Typical Production and Marketing Costs Per Container for Vegetable Crops;
220-Crop-Acre Farm in Subarea I, Santa Maria,
and Adjacent Truck Crop Areas, 1950-1952





(2) There is limited opportunity to reduce the costs for the harvesting and marketing group of services. Such charges are made largely on a per-unit basis--they are weighted with the costs of materials and labor--and most of these services are relatively firmly established in trade practice, custom, or law; it is difficult to reduce cost by paring services.

(3) The harvesting and marketing group of services is largely on a contract basis and represents cash outlay. They, therefore, have first claim upon the proceeds from sales of the product.

(4) While production costs are largely upon a per-acre basis and, therefore, should permit decreases per container as yields increase, actually the market situation prevents fullest use of this principle. Relevant yields are the quantities that can be marketed at satisfactory prices. Such, frequently, are below the full yield potentials. Commonly, therefore, an important fraction of a given crop is not harvested because it is not profitable at the prices currently offered. As a result, it is not feasible to minimize production cost per unit by maximizing yield. Probably farmer awareness of these factors largely explains some of the cost relationships found among the power, machinery, and equipment items in production costs. Farmers know that timeliness and quality of product in marketing are more closely related to maximum earnings than is minimum operating cost for field power or other equipment services. They, therefore, tend to maintain rather heavy investment in such equipment, accepting the fact that this policy leads to relatively high cost per hour and per acre for the services in question.

Both Production and Harvesting and Marketing Costs Rose Between 1948-1950 and 1949-1952.--Each of the vegetable crops included in this study showed appreciable cost increases between the two periods considered. The increases for the production costs varied from 7 per cent for cauliflower to 14 per cent for fresh tomatoes. The range in money cost per container was from 4 cents for the former to 12 cents for the latter crop (Figure IV). Comparable cost rises were found

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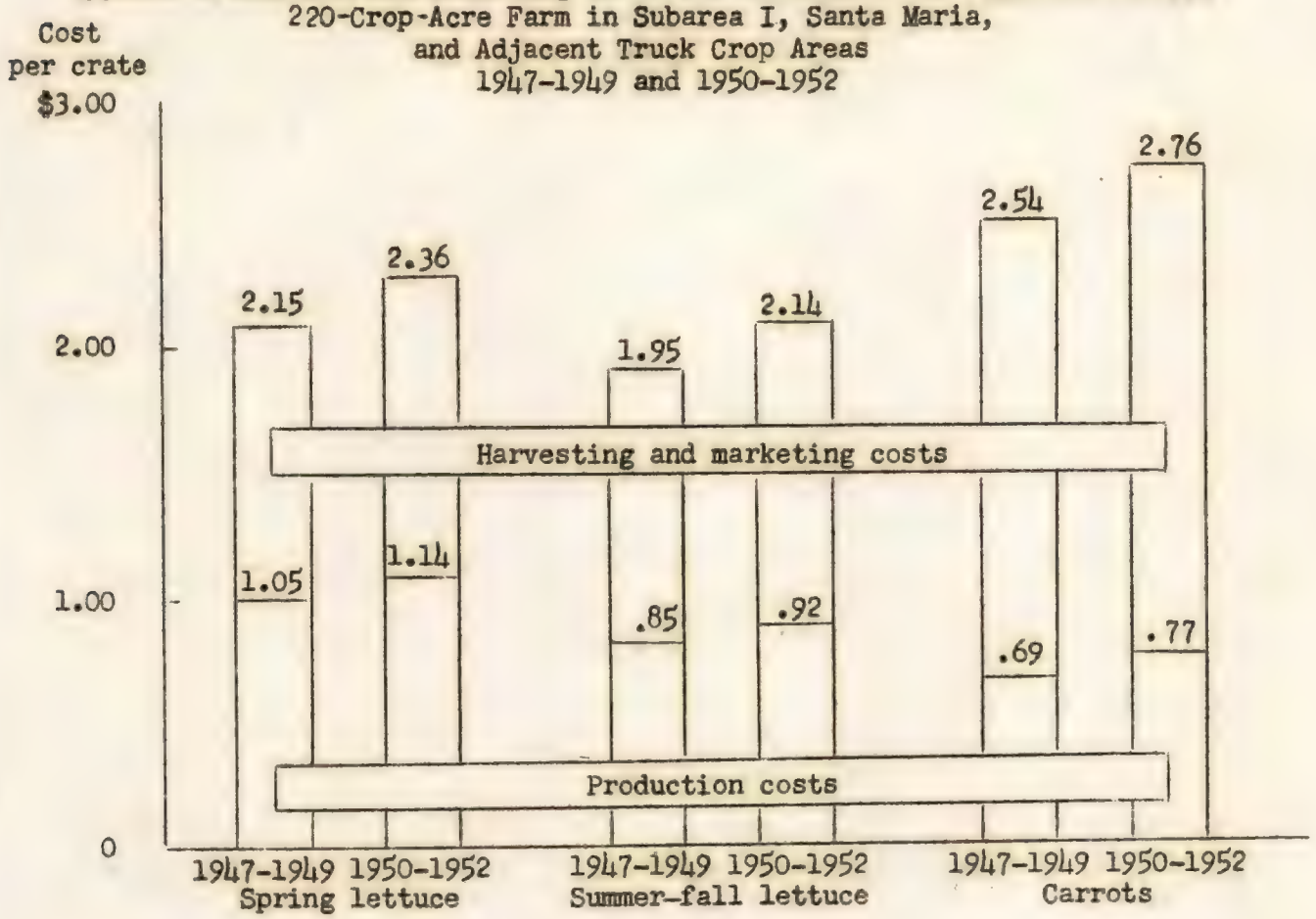
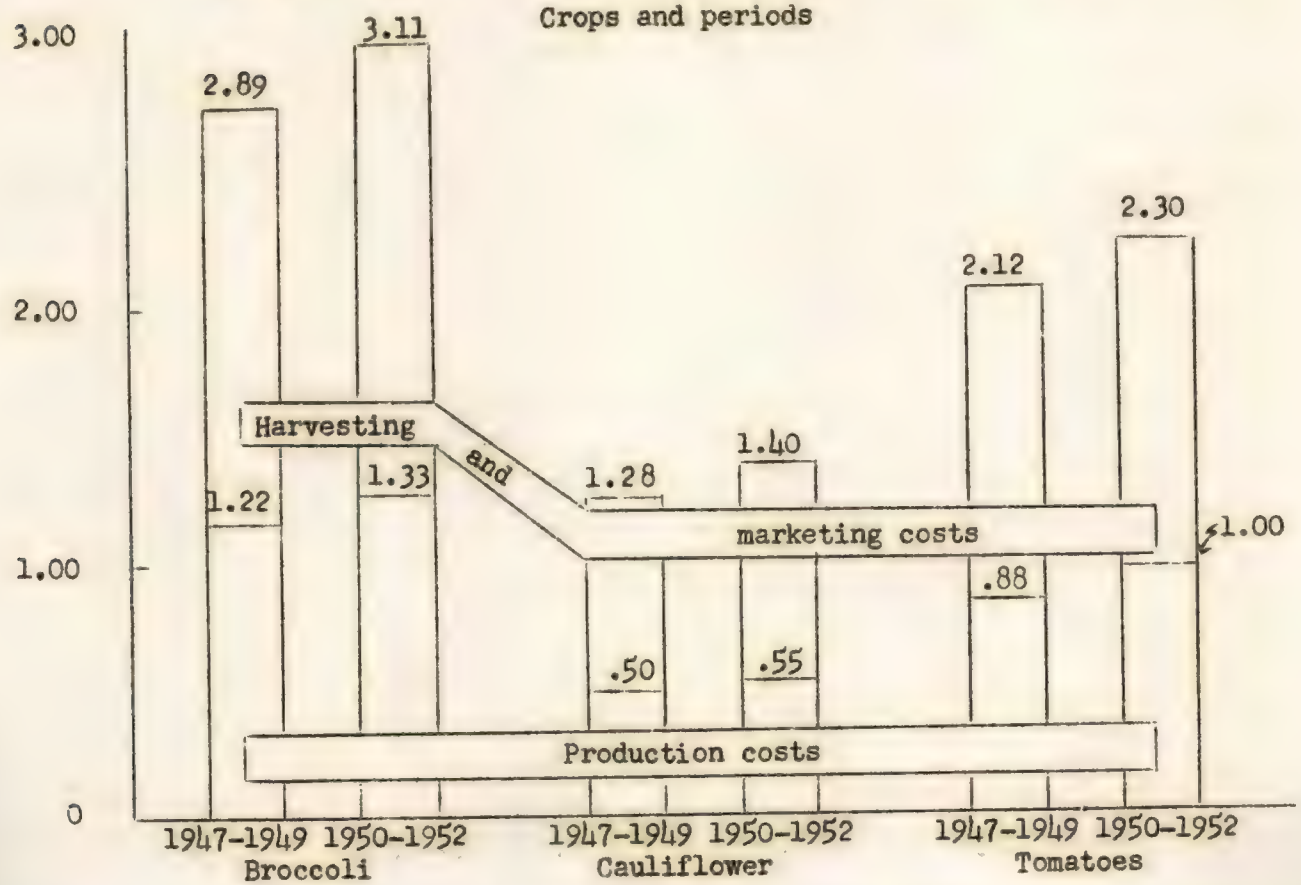
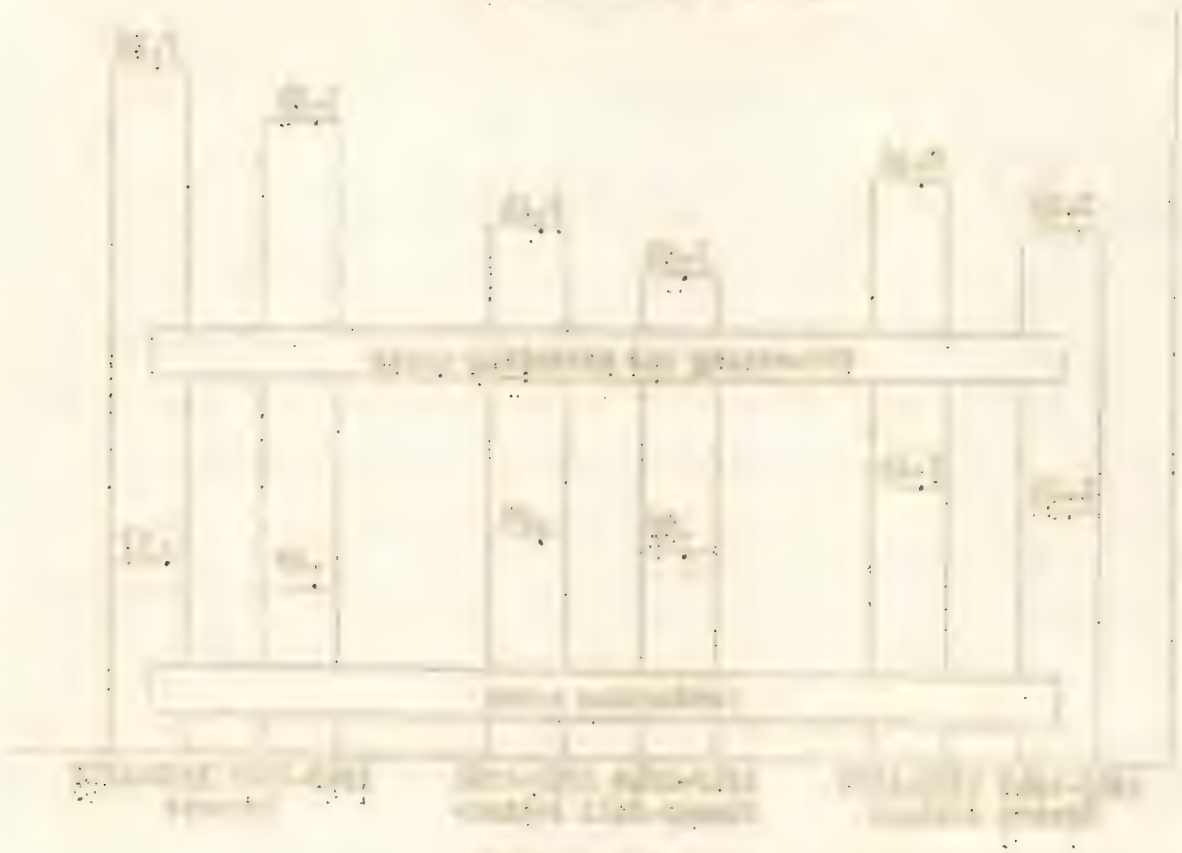
production costs varied from 7 per cent for cauliflower to 15 per cent for fresh tomatoes. The range in money cost per container was from 4 cents for the former to 12 cents for the latter crop (Figure IV). Comparable cost rises were found

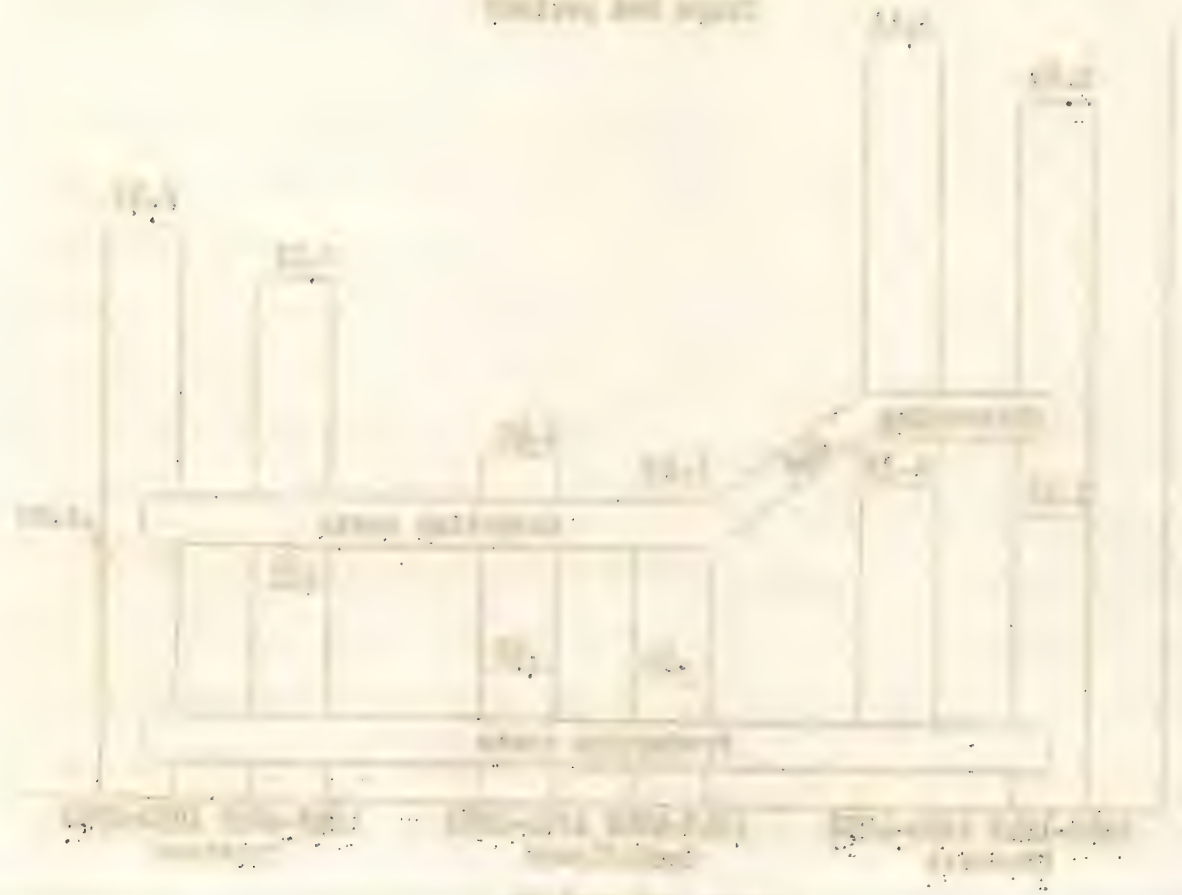
FIGURE IV

Typical Production and Marketing Costs Per Container for Vegetable Crops;
220-Crop-Acre Farm in Subarea I, Santa Maria,
and Adjacent Truck Crop Areas
1947-1949 and 1950-1952









percentagewise for harvesting and marketing combined. Actual amounts of the increases were greater for these operations than for the production group for the reason that the harvesting and marketing costs exceeded those for production at the 1947-1949 price level.

It is interesting to note that the percentage increases in both production and harvesting and marketing agree generally with the rise in the U. S. Department of Agriculture index of prices paid by farmers between the two periods. This index averaged 249 per cent of the 1910-1914 base during 1947-1948 and rose to an average of 274 per cent during the period, 1950-1952. The difference, 25 percentage points, represents 10 per cent of the 1947-48 average.

Labor, materials, and power in that order are the most important groups of production items responsible for the cost rise. These items account for $10.91 of the $14.60 total rise in the cost of producing summer and fall lettuce on the 220-acre farm in Subarea I. Other items explain the additional $3.69, "miscellaneous" being the most important in this group. Similar relationships were found for the other vegetable crops studied.

Higher prices for materials largely explain the increases in harvesting and marketing costs for all vegetable crops studied. Containers and their component parts represent the most important items among the materials used in harvesting and marketing. The heavy costs for this item, plus attendant services geared to the conventional wooden crate, are stimulating attempts to find cheaper means of packaging. Currently, the industry is developing cardboard cartons and new methods in refrigerating and merchandising.

Production Costs Per Container Were Lower in Subarea I Than in Subarea II.--Producers in Subarea I make a cost saving due to their higher yields. The better yields, in turn, reflect more favorable soil, water, and temperature conditions. Data for the chief vegetable crops for the 220-crop-acre size farm in Subarea I and the 240-crop-acre unit in Subarea II show this cost advantage. Actual costs

per container ranged from 55 cents for cauliflower to $1.33 for broccoli in Subarea I; from 73 cents for cauliflower to $1.51 for broccoli in Subarea II. The margin per container ranged from 10 cents for summer lettuce to 36 cents for carrots (Figure V).

It is recognized that the method of study used here does not permit identifying and evaluating all the cost variations among the various crop acre size units. Undoubtedly, there are wider differences in costs than those shown by the data presented, both among size units and among individual operators. Physical inputs of labor, power and machinery, irrigation water, and materials were standardized on a per-acre basis in determining the requirements to produce the various crops in the study area. Variations in cost for power, irrigation, and machinery reflect differences in cost per unit of these inputs related to the proportion of full capacity utilized. There were no such differences for labor, contract services, and materials, inasmuch as these items were charged against each crop acre size unit at the same price. All the cost variation, therefore, must arise with respect to the other categories of operating costs--miscellaneous, irrigation, power, and equipment.

Production cost data resulting from this study are presented as typical inputs and costs for producing vegetable crops on family-type farms in the subareas studied. They identify some of the problems in providing the various productive services at minimum cost and show something of the relationship between natural factors and production costs. A later publication in this series will provide more detailed information on the inputs of labor, power, and machinery. Information presented here will allow those who are interested to make considerably further interpretation of the cost variations accompanying differences in technology in vegetable production. It is emphasized that such differences, as well as variations in prices of input items and in yields, will cause costs per yield unit to vary widely among producers and from season to season.

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power, and equipment.

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size unit at the same price." All the cost variation, therefore, must arise with

full capacity utilized. There were no such differences for labor, contract serv-

fect differences in cost per unit of these inputs related to the proportion of

on a per-acre basis in determining the requirements to produce the various crops

of labor, power and machinery, irrigation water, and materials were standardized

presented, both among area units and among individual operators. Physical inputs

It is recognized that the method of study used here does not permit identify-

ing the [illegible] in yield that may result among the various management

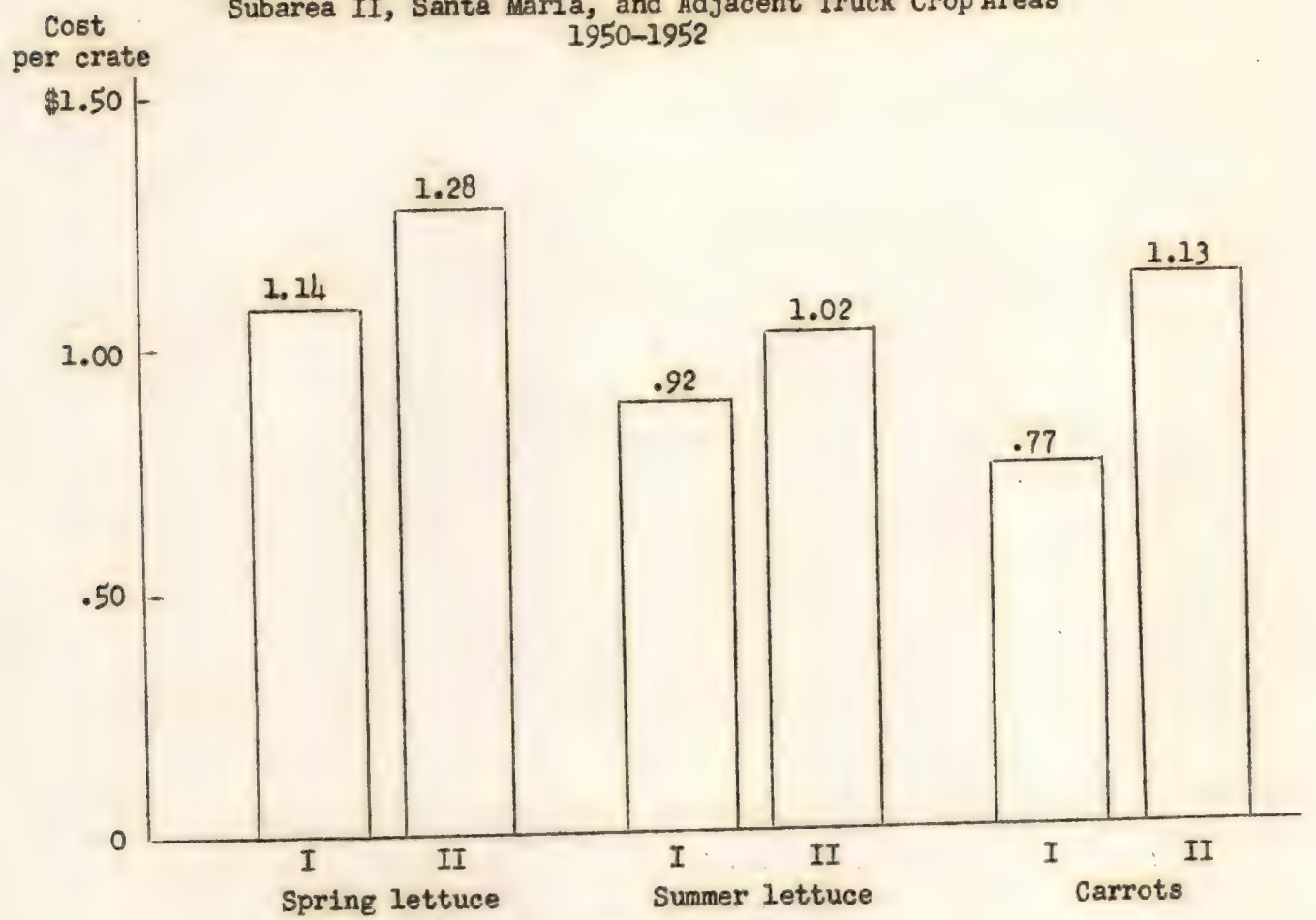
practices, [illegible] in yield that may result among the various management

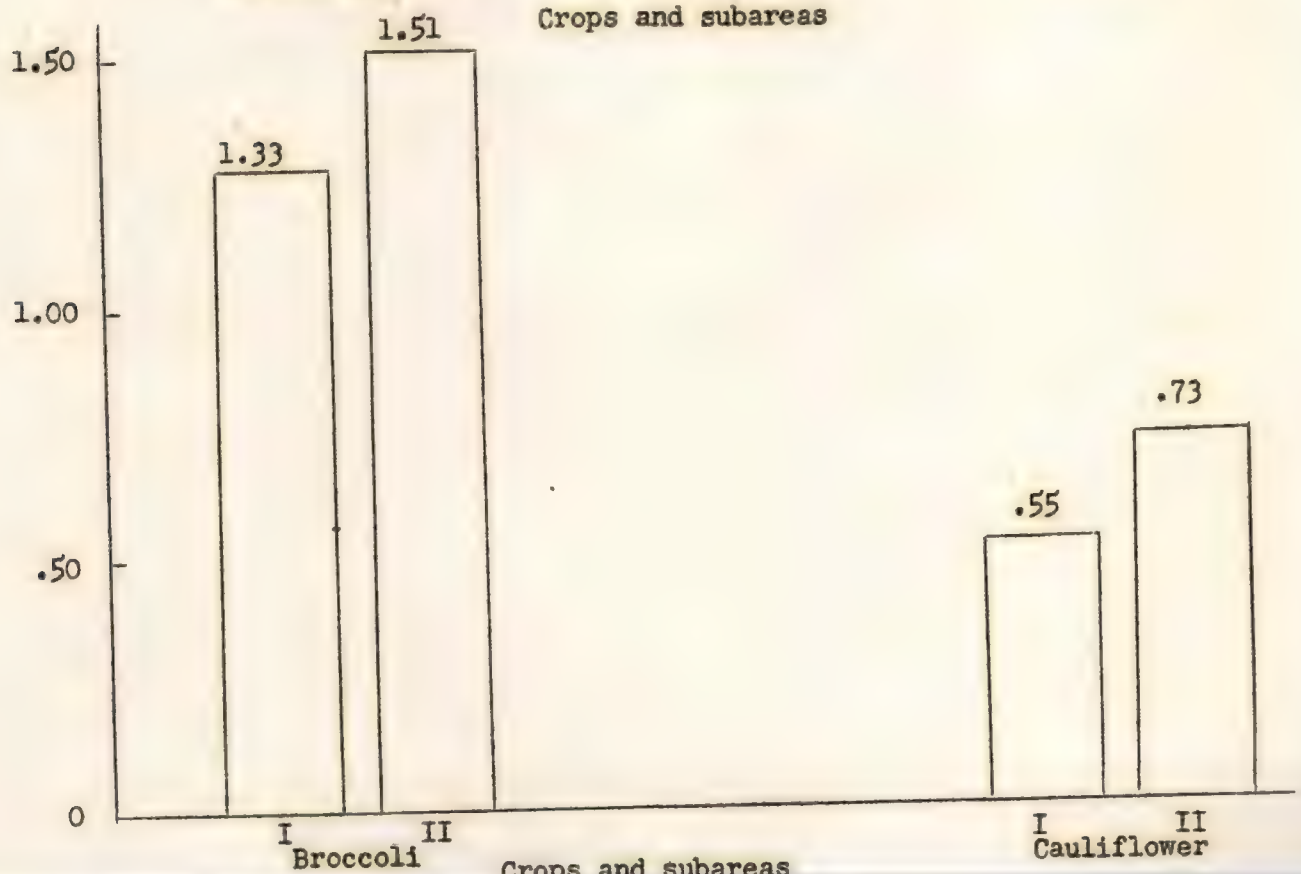
practices, [illegible] in yield that may result among the various management

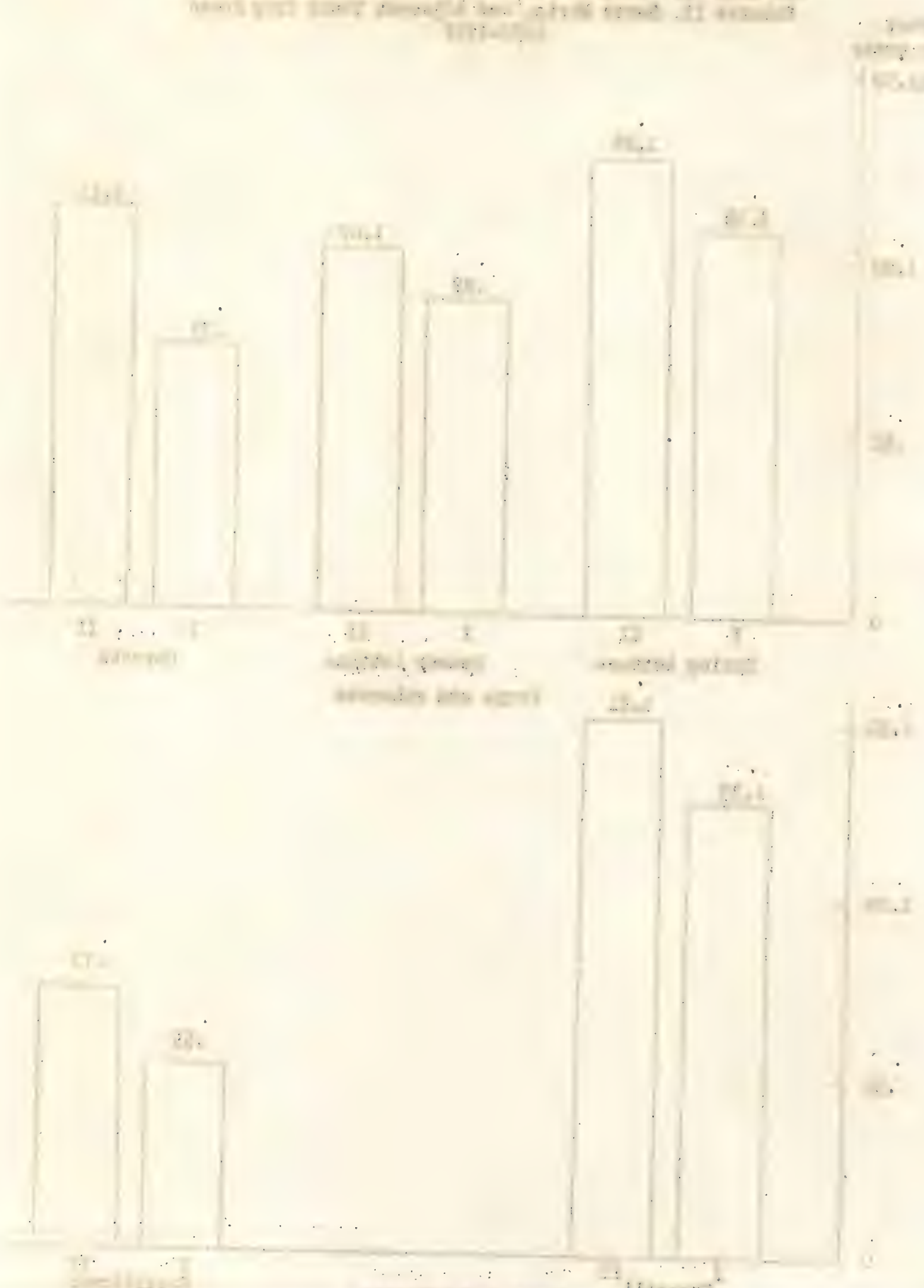
practices,

FIGURE V

Typical Production Costs Per Container for Vegetable Crops; 220-Crop-Acre Farm in Subarea I, 240-Crop-Acre Farm in Subarea II, Santa Maria, and Adjacent Truck Crop Areas 1950-1952







APPENDIX TABLE 1

Typical Prices of Farm Products, and Input Materials and Services on Vegetable Farms in Santa Maria and Adjacent Truck Crop Areas, 1947-1949 and 1950-1952

Item	Unit	Price 1947-1949	Price 1950-1952
1	2	3	4
		dollars	
Farm products			
Spring lettuce	crate	2.46	2.41
Summer lettuce	crate	2.60	2.04
Carrots	crate	3.65	3.50
Broccoli	crate	3.60	3.60
Cauliflower	crate	1.22	1.20
Sugar beets	ton	13.78	13.53
Tomatoes	lug	2.50	2.26
Dry beans	cwt.	9.85	8.73
Potatoes	cwt.	2.76	3.11
Contract services			
Dusting (airplane)	acre	1.50	2.40
Fumigate soil[a]			
6 gallons per acre	acre	--	34.70
4 gallons per acre	acre	25.00	24.30
Spray carrots	acre	1.25	2.50
Cut potato seed	cwt.	.35	.40
Clean beans	ton	2.00	2.50
Thresh beans	cwt.	.60	.70
Haul beans	ton	1.50	1.60
Store beans (3 months)	ton	2.00	2.00
Insure beans	$100	1.50	1.50
Hoe sugar beets	acre	10.00	12.00
Thin sugar beets	acre	14.00	18.00
Topping sugar beets	ton	1.25	1.59
Haul sugar beets	ton	1.25	1.50
Fertilizer			
Ammonia gas	lb.	.11	.115
10-10-5	ton	64.00	71.62
Fuels, lubricants			
Diesel oil	gal.	.114	.152
Gasoline[b]	gal.	.167	.199
Gun grease	lb.	.15	.137
Lubricating oil	qt.	.185	.15
Gear lubricant	qt.	.15	.137
Oil filter	one	.90	.95

a/ Includes cost of amounts of fumigant specified.

Continued -

b/ Percent of gross payment to workers.

Appendix Table 1 - Continued

Item	Unit	Price 1947-1949	Price 1950-1952
1	2	3	4
		dollars	
Seeds			
Lettuce	lb.	5.50	3.20
Carrots	lb.	1.50	1.40
Broccoli	lb.	2.30	2.05
Cauliflower	lb.	17.50	11.25
Beans, small white	cwt.	8.00	12.00
Potatoes	cwt.	5.00	6.00
Tomato plants	1,000	6.25	10.00
Sugar beets	lb.	.46	.515
Spray materials			
Copper dust (5%)	cwt.	8.50	--
Copper, D.D.T., sulfur	cwt.	11.35	--
D.D.T. dust (5%)	cwt.	7.05	--
D.D.T. dust (50%)	cwt.	30.00	--
D.D.T. sulfur	cwt.	9.10	--
Nicotine 10F (4%)	cwt.	18.20	--
Weed oil	gal.	.17	.195
Sulfur	50 lb.	4.00	--
D.D.T. 5 Zn 3 S 25	cwt.	--	12.50
D.D.T. 5 Zn 3 Parathion 2	cwt.	--	14.00
D.D.T. 10%	cwt.	--	10.00
Parathion 2	cwt.	--	12.50
T.E.P.P.	cwt.	--	14.50
Ethyl dibromide	gal.	--	5.20
Labor			
Foreman (Farm)	hour	1.20	1.35
Foreman (contract services)	hour	1.50	1.60
Tractor driver	hour	.85	1.00
Irrigator	hour	.85	1.00
Hoe hand	hour	.70	.80
Contractor's fee	percent b/	10%	10%
Other			
Area I assessed value	acre	250.00	250.00
Area II assessed value	acre	200.00	200.00
Ad valorem tax	$100	4.10	4.73
Potato bags	each	.25	.17
Compensation insurance	$100	1.50	1.45

Continued -

Appendix Table 1 - Continued

Harvesting and marketing data.

Item	Unit c/	Lettuce		Carrots		Broccoli		Cauliflower	
		1947-1949	1950-1952	1947-1949	1950-1952	1947-1949	1950-1952	1947-1949	1950-1952
1	2	3	4	5	6	7	8	9	10
		dollars							
Contract services									
Haul., pack., load.	100 cr.	30.00	30.00	75.00	75.00	70.00	70.00	23.00	23.00
Miscellaneous	100 cr.	14.50	14.50	23.00	23.00	22.00	22.00	10.00	10.00
Hauling (local)	100 cr.	10.00	10.00	10.00	10.00	5.00	5.00	5.00	5.00
Materials									
Containers	100 cr.	45.00	55.00	50.00	60.00	37.00	44.00	35.00	42.00
Lids, nails, labels	100 cr.	7.50	9.00	7.50	9.00	8.00	9.50	4.50	5.50
Liners, packing materials	100 cr.	3.00	3.50	9.50	10.75	15.00	17.50	--	--
Ice	100 cr.	--	--	10.00	10.50	10.00	10.00	--	--
		Tomatoes		Potatoes					
Contract services									
Haul., pack., load.	100 lugs or sacks	1.50	4.20	35.00	45.71				
Miscellaneous	100 lugs or sacks	--	1.60	--	--				
Hauling (local)	100 lugs or sacks	6.00	8.00	10.00	10.00				
Materials									
Containers	100 lugs or sacks	34.00	40.00	25.00	16.50				
Lids, nails, labels	100 lugs	5.00	6.00	--	--				
Liners, packing materials	100 lugs	15.00	18.00	--	--				
Ice		--	--	--	--				

c/ Expressed in form of conventional containers. Lettuce standard crate of 4 or 5 dozen, carrots standard crate of 6 dozen bunches, broccoli pony crate of 28 bunches, cauliflower pony crate, tomatoes 32 pound lug, and potatoes 100 pound sack.

APPENDIX TABLE 2

Typical Overhead Costs and Operating Expenses for Tractors and Trucks; Vegetable Farms in Subareas I and II, Santa Maria and Adjacent Truck Crop Areas, 1947-1949[a]

Item	Unit	Price	T-4[b]		W-2[c]	
			Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7
Subarea I 220 Crop Acre Farm						
Tractors						
Annual use	hour	--	1,279	--	1,784	--
No. tractors	tractor	--	1	--	2	--
Overhead	dollar	--	1	1,250	1	572
Total overhead	dollar	--	1	1,250	2	1,144
Cost per hour	dollar	--	1	.98	2	.64
Diesel fuel	gallon	.114	4,860	554	--	--
Gasoline	gallon	.167	--	--	4,460	745
Crankcase oil	quart	.185	192	36	144	27
Gear lubricant	quart	.15	40	6	14	2
Grease	pound	.15	128	19	89	13
Oil filters	one	.90	13	12	8	7
Total operating	dollar	--		627		794
Cost per hour	dollar	--		.49		.44
Total cost	dollar	--		1,877		1,938
Cost per hour	dollar	--		1.47		1.08
Trucks			½ Ton		1½ Ton	
Annual use	miles	--	7,500		3,520	
Total annual cost	dollar	--		525		387.20
Total cost per mile	dollar	--		.07		.11
Total cost per crop acre	dollar	--		2.55		1.74

a/ See Table 6 for detailed annual overhead costs. Continued -

b/ Inputs for T-4 tractor calculated as follows: Subarea I, diesel fuel 3.8 gallons per hour, crankcase oil 15 quarts and oil filters 1 per 100 hours, transmission and gear lubricant 31 quarts and grease 100 pounds per 1,000 hours; Subarea II, diesel fuel 3.5 gallons per hour, other items same as for Subarea I.

c/ Inputs for W-2 tractor calculated as follows: gasoline 2.5 gallons per hour, crankcase oil 8 quarts and oil filters 1 per 100 hours, transmission and gear lubricant 8 quarts and grease 50 pounds per 1,000 hours.

Item	Unit	Price	T-4		W-2	
			Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7
Subarea I 340 Crop Acre Farm						
Tractors						
Annual use	hours	--	1,976	--	3,264	--
No. tractors	tractor	--	2	--	3	--
Overhead	dollar	--	1	1,250	1	572
Total overhead	dollar	--	2	2,500	3	1,716
Cost per hour	dollar	--	2	1.26	3	.53
Diesel fuel	gallon	.114	7,509	856	--	--
Gasoline	gallon	.167	--	--	8,160	1,363
Crankcase oil	quart	.185	296	55	261	48
Gear lubricant	quart	.15	61	9	26	4
Grease	pound	.15	198	30	163	24
Oil filters	one	.90	20	18	33	30
Total operating	dollar	--		968		1,469
Cost per hour	dollar	--		.49		.45
Total cost	dollar	--		3,468		3,185
Cost per hour	dollar	--		1.75		.98
Trucks			½ Ton		1½ Ton	
Annual use	mile	--	11,594		5,440	
Total annual cost	dollar			811.58		598.40
Total cost per mile	dollar	--		.07		.11
Total cost per crop acre	dollar	--		2.39		1.76

Continued -

Item	Unit	Price	T-4		W-2	
			Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7
Subarea I 500 Crop Acre Farm						
Tractors						
Annual use	hour	--	2,888	--	4,736	--
No. tractors	tractor	--	3	--	4	--
Overhead	dollar	--	1	1,250	1	572
Total overhead	dollar	--	3	3,750	4	2,288
Cost per hour	dollar	--	3	1.30	4	.48
Diesel fuel	gallon	.114	10,974	1,251	--	--
Gasoline	gallon	.167	--	--	11,840	1,977
Crankcase oil	quart	.185	433	80	384	74
Gear lubricant	quart	.15	90	14	38	6
Grease	pound	.15	289	43	237	36
Oil filters	one	.90	29	26	48	43
Total operating	dollar	--		1,414		2,139
Cost per hour	dollar	--		.49		.45
Total cost	dollar	--		5,164		4,427
Cost per hour	dollar	--		1.79		.93
Trucks			½ Ton		1½ Ton	
Annual use	mile	--	17,050		8,000	
Total annual cost	dollar	--		1,193.50		880
Total cost per mile	dollar	--		.07		.11
Total cost per crop acre	dollar	--		2.39		1.75

Continued -

Item	Unit	Price	T-4		W-2	
			Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7
Subarea II 150 Crop Acre Farm						
Tractors						
Annual use	hours	--	725	--	904	--
No. tractors	tractor	--	1	--	2	--
Overhead	dollar	--	1	1,250	1	572
Total overhead	dollar	--	1	1,250	2	1,154
Cost per hour	dollar	--	1	1.72	2	1.28
Diesel fuel	gallon	.117	2,538	297	--	--
Gasoline	gallon	.167	--	--	2,260	377
Crankcase oil	quart	.185	109	20	72	13
Gear lubricant	quart	.15	22	3	7	1
Grease	pound	.15	72	11	45	7
Oil filters	one	.90	7	6	9	8
Total operating	dollar	--		337		406
Cost per hour	dollar	--		.46		.45
Total cost	dollar	--		1,587		1,560
Cost per hour	dollar	--		2.19		1.73
Trucks			½ Ton		1½ Ton	
Annual use	mile	--	5,120		2,300	
Total annual cost	dollar	--		358.40		253
Total cost per mile	dollar	--		.07		.11
Total cost per crop acre	dollar	--		2.54		1.79

Continued -

Item	Unit	Price	T-4		W-2	
			Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7
Subarea II 240 Crop Acre Farm						
Tractors						
Annual use	hour	--	1,110	--	1,918	--
No. tractors	tractor	--	2	--	3	--
Overhead	dollar	--	1	1,250	1	572
Total overhead	dollar	--	2	2,500	3	1,716
Cost per hour	dollar	--	2	2.26	3	.90
Diesel fuel	gallon	.117	3,885	455	--	--
Gasoline	gallon	.167	--	--	4,795	801
Crankcase oil	quart	.185	166	31	153	28
Gear lubricant	quart	.15	34	5	15	2
Grease	pound	.15	111	17	96	14
Oil filters	one	.90	11	10	19	17
Total operating	dollar	--		518		862
Cost per hour	dollar	--		.47		.45
Total cost	dollar	--		3,018		2,578
Cost per hour	dollar	--		2.73		1.35
Trucks			½ Ton		1½ Ton	
Annual use	mile	--	8,180		3,648	
Total annual cost	dollar	--		572.60		401.28
Total cost per mile	dollar	--		.07		.11
Total cost per crop acre	dollar	--		2.51		1.76

Continued -

Item	Unit	Price	T-4		C-2	
			Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7
Subarea II 320 Crop Acre Farm						
Tractors						
Annual use	hour	--	1,451	--	2,341	--
No. tractors	tractor	--	2	--	3	--
Overhead	dollar	--	1	1,250	1	572
Total overhead	dollar	--	2	2,500	3	1,716
Cost per hour	dollar	--	2	1.72	3	.73
Diesel fuel	gallon	.117	5,078	594	--	--
Gasoline	gallon	.167	--	--	5,852	977
Crankcase oil	quart	.185	218	40	187	35
Gear lubricant	quart	.15	45	7	19	3
Grease	pound	.15	145	22	117	18
Oil filters	one	.90	15	14	23	21
Total operating	dollar	--		677		1,059
Cost per hour	dollar	--		.47		.45
Total cost	dollar	--		3,177		2,775
Cost per hour	dollar	--		2.19		1.18
Trucks			½ Ton		1½ Ton	
Annual use	mile	--	11,594		5,068	
Total annual cost	dollar	--		811.58		557.48
Total cost per mile	dollar	--		.07		.11
Total cost per crop acre	dollar	--		3.18		2.19

Continued -

Item	Unit	Price	Amount	Remarks
1	2	3	4	5
Carried forward				
Concrete				
Cement Mix	Cubic	—	—	—
Ex. Footings	Cubic	—	—	—
Footings	Cubic	—	—	—
Steel Columns	Cubic	—	—	—
Floor Pan Slabs	Cubic	—	—	—
Steel Floor	Cubic	—	—	—
Building	Cubic	—	—	—
Foundations	Cubic	—	—	—
Floor Slabs	Cubic	—	—	—
Stairs	Cubic	—	—	—
Fill Filters	Cubic	—	—	—
Steel Columns	Cubic	—	—	—
Floor Pan Beam	Cubic	—	—	—
Total Area	Cubic	—	—	—
Floor Pan Slabs	Cubic	—	—	—
Concrete				
Steel Mix	Cubic	—	—	—
Total Reinf Area	Cubic	—	—	—
Total Load Per Slab	Cubic	—	—	—
Total Load Per				
Beams Area	Cubic	—	—	—

APPENDIX TABLE 3

Typical Overhead Costs and Operating Expenses for Tractors and Trucks; Vegetable Farms in Subareas I and II, Santa Maria and Adjacent Truck Crop Areas, 1950-1952[a/][b/]

Item	Unit	Price	T-4[c/] Number or amount	T-4[c/] Cost	W-2[d/] Number or amount	W-2[d/] Cost
1	2	3	4	5	6	7
Subarea I 340 crop acre farm						
Tractors						
Annual use	hour	--	1,976	--	3,264	--
No. tractors	tractor	--	2	--	3	--
Overhead	dollar	--	1	1,460	1	667
Total overhead	dollar	--	2	2,920	3	2,001
Cost per hour	dollar	--	2	1.48	3	.61
Diesel fuel	gallon	.152	7,509	1,141	--	--
Gasoline	gallon	.199	--	--	8,160	1,624
Crankcase oil	quart	.15	296	44	261	39
Gear lubricant	quart	.137	61	8	26	4
Grease	pound	.137	198	27	163	22
Oil filters	one	.95	20	19	33	31
Total operating	dollar	--	--	1,239	--	1,720
Cost per hour	dollar	--	--	.63	--	.53
Total cost	dollar	--	--	4,159	--	3,721
Cost per hour	dollar	--	--	2.10	--	1.14
			½ Ton		1½ Ton	
Trucks						
Annual use	mile	--	11,594	--	5,440	--
Total annual cost	dollar	--	--	927	--	652.80
Total cost per mile	dollar	--	--	.08	--	.12
Total cost per acre	dollar	--	--	2.73	--	1.92

Continued -

a/ See Table 7 for detailed annual overhead costs.

b/ Inputs for T-4 tractors calculated as follows: Subarea I, diesel fuel 3.8 gallons per hour, crankcase oil 15 quarts and oil filters 1 per 100 hours, transmission and gear lubricant 31 quarts and grease 100 pounds per 1,000 hours; Subarea II, diesel fuel 3.5 gallons per hour, other items same as Subarea I.

c/ Data for Subarea I farms with 220 crop acres appears in text as Table 12, page 26.

d/ Inputs for W-2 tractor calculated as follows: gasoline 2.5 gallons per hour, crankcase oil 8 quarts and oil filters 1 per 100 hours, transmission and gear lubricant 8 quarts and grease 50 pounds per 1,000 hours.

(Continued)

3/ See table 7 for derailed annual overhead costs.

c/ Data for Subarea 1 farms with 220 crop acres adapted in text as Table 12, page 26.

Item	Unit	Price	T-4		W-2	
			Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7
Subarea I 500 crop acre farm						
Tractors						
Annual use	hour	--	2,888	--	4,736	--
No. tractors	tractor	--	3	--	4	--
Overhead	dollar	--	1	1,460	1	667
Total overhead	dollar	--	3	4,380	4	2,668
Cost per hour	dollar	--	3	1.52	4	.56
Diesel fuel	gallon	.152	10,974	1,668	--	--
Gasoline	gallon	.199	--	--	11,840	2,356
Crankcase oil	quart	.15	433	65	384	58
Gear lubricant	quart	.137	90	12	38	5
Grease	pound	.137	289	40	237	32
Oil filters	one	.95	29	28	48	46
Total operating	dollar	--	--	1,813	--	2,497
Cost per hour	dollar	--	--	.63	--	.53
Total cost	dollar	--	--	6,193	--	5,165
Cost per hour	dollar	--	--	2.14	--	1.09
			½ Ton		1½ Ton	
Trucks						
Annual use	mile	--	17,050	--	8,000	--
Total annual cost	dollar	--	--	1,364	--	960
Total cost per mile	dollar	--	--	.08	--	.12
Total cost per acre	dollar	--	--	2.73	--	1.92

Continued -

Appendix Table 3 - Continued

Item	Unit	Price	T-4		W-2	
			Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7
Subarea II 150 crop acre farm						
Tractors						
Annual use	hour	--	725	--	904	--
No. tractors	tractor	--	1	--	2	--
Overhead	dollar	--	1	1,460	1	667
Total overhead	dollar	--	1	1,460	2	1,334
Cost per hour	dollar	--	1	2.01	2	1.48
Diesel fuel	gallon	.152	2,538	386	--	--
Gasoline	gallon	.199	--	--	2,260	450
Crankcase oil	quart	.15	109	16	72	11
Gear lubricant	quart	.137	22	3	7	1
Grease	pound	.137	72	10	45	6
Oil filters	one	.95	7	7	9	9
Total operating	dollar	--	--	422	--	477
Cost per hour	dollar	--	--	.58	--	.53
Total cost	dollar	--	--	1,882	--	1,811
Cost per hour	dollar	--	--	2.60	--	2.00
			½ Ton		1½ Ton	
Trucks						
Annual use	mile	--	5,120	--	2,300	--
Total annual cost	dollar	--	--	409.60		276
Total cost per mile	dollar	--	--	.08	--	.12
Total cost per acre (vegetables)	dollar	--	--	2.90	--	1.96
Total cost per acre (beans)	dollar	--	--	1.45	--	.98

Continued -

Item	Unit	Price	T-4		W-2	
			Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7
Subarea II 240 crop acre farm						
Tractors						
Annual use	hour	--	1,110	--	1,918	--
No. tractors	tractor	--	2	--	3	--
Overhead	dollar	--	1	1,460	1	667
Total overhead	dollar	--	2	2,920	3	2,001
Cost per hour	dollar	--	2	2.63	3	1.04
Diesel fuel	gallon	.152	3,885	591	--	--
Gasoline	gallon	.199	--	--	4,795	954
Crankcase oil	quart	.15	166	25	153	23
Gear lubricant	quart	.137	34	5	15	2
Grease	pound	.137	111	15	96	13
Oil filters	one	.95	11	10	19	18
Total operating	dollar	--	--	646	--	1,010
Cost per hour	dollar	--	--	.58	--	.53
Total cost	dollar	--	--	3,566	--	3,011
Cost per hour	dollar	--	--	3.21	--	1.57
			½ Ton		1½ Ton	
Trucks						
Annual use	mile	--	8,180	--	3,648	--
Total annual cost	dollar	--	--	654.40	--	437.76
Total cost per mile	dollar	--	--	.08	--	.12
Total cost per acre (vegetables)	dollar	--	--	2.87	--	1.92

Continued -

Item	Unit	Price	T-4		W-2	
			Number or amount	Cost	Number or amount	Cost
1	2	3	4	5	6	7
Subarea II 320 crop acre farm						
Tractors						
Annual use	hour	--	1,451	--	2,341	--
No. tractors	tractor	--	2	--	3	--
Overhead	dollar	--	1	1,460	1	667
Total overhead	dollar	--	2	2,920	3	2,001
Cost per hour	dollar	--	2	2.01	3	.85
Diesel fuel	gallon	.152	5,078	772	--	--
Gasoline	gallon	.199	--	--	5,852	1,165
Crankcase oil	quart	.15	218	33	187	28
Gear lubricant	quart	.137	45	6	19	3
Grease	pound	.137	145	20	117	16
Oil filters	one	.95	15	14	23	22
Total operating	dollar	--	--	845	--	1,234
Cost per hour	dollar	--	--	.58	--	.53
Total cost	dollar	--	--	3,765	--	3,235
Cost per hour	dollar	--	--	2.59	--	1.38
			½ Ton		1½ Ton	
Trucks						
Annual use	mile	--	11,594	--	5,068	--
Total annual cost	dollar	--	--	927.52	--	608.16
Total cost per mile	dollar	--	--	.08	--	.12
Total cost per acre (vegetables)	dollar	--	--	3.64	--	2.38

Appendix Table 3 - Continued

APPENDIX TABLE 4

Machinery Hours Use by Crops, Entire Farm Organization; Vegetable Farms in Subareas I and II, Santa Maria and Adjacent Truck Crop Areas, 1947-1949[a]

Subarea I Farms	220 Crop acres											
Items	Lettuce			Carrots	Broccoli	Cauli-flower	Sugar beets	Tomatoes	Dry beans	Pota-toes	Barley	Total
	Spring	Summer	Fall									
1	2	3	4	5	6	7	8	9	10	11	12	13
Acres	34	45	--	31	27	47	--	39	--	--	--	223
Tool carrier	36.72	48.60	--	191.89	23.49	54.99	--	42.12	--	--	--	398
Ditcher	17.00	22.50	--	15.50	13.50	23.50	--	19.50	--	--	--	112
Lister	19.72	26.10	--	15.50	9.99	31.49	--	22.62	--	--	--	125
Lifter	--	--	--	160.89	--	--	--	--	--	--	--	161
Chisel	--	--	--	--	--	--	--	--	--	--	--	--
Plow	34.00	45.00	--	31.00	27.00	58.75	--	39.00	--	--	--	235
Disc harrow	85.00	112.50	--	93.00	44.28	90.24	--	58.50	--	--	--	484
Harrow (spike)	51.00	67.50	--	46.50	17.28	31.49	--	58.50	--	--	--	272
Roller	39.44	52.20	--	31.00	27.00	62.51	--	--	--	--	--	212
Float	39.44	52.20	--	31.00	27.00	62.51	--	51.87	--	--	--	264
Cultivator (4 bed)	113.90	150.75	--	155.00	135.00	188.00	--	117.00	--	--	--	860
Potato planter (2 row)	--	--	--	--	--	--	--	--	--	--	--	--
Vegetable planter and shaper (2 bed)	22.44	29.70	--	41.23	27.00	54.99	--	12.00	--	--	--	187
Beet and bean planter (4 row)	--	--	--	--	--	--	--	--	--	--	--	--
Broadcaster	--	--	--	--	22.41	--	--	--	--	--	--	22
Fertilizer distributor (4 row)	17.00	22.50	--	--	--	62.51	--	78.00	--	--	--	180
Duster (4 row)	--	--	--	--	--	94.00	--	78.00	--	--	--	172
Sprayer (4 row)	--	--	--	17.98	--	--	--	--	--	--	--	18
Cauliflower marker	--	--	--	--	--	23.50	--	--	--	--	--	24
Cauliflower cart	--	--	--	--	--	326.65	--	--	--	--	--	327

Continued -

a/ Calculated from practice data reported by farmers interviewed.

(continued)

Appendix Table 4 - Continued

Subarea I Farms	340 Crop acres											
Items	Lettuce			Carrots	Broccoli	Cauli-flower	Sugar beets	Tomatoes	Dry beans	Pota-toes	Barley	Total
	Spring	Summer	Fall									
1	2	3	4	5	6	7	8	9	10	11	12	13
Acres	50	104	--	18	54	114	--	--	--	--	--	340
Tool carrier	54.00	112.32	--	111.42	46.98	133.38	--	--	--	--	--	458
Ditcher	25.00	52.00	--	9.00	27.00	57.00	--	--	--	--	--	170
Lister	29.00	60.32	--	9.00	19.98	76.38	--	--	--	--	--	195
Lifter	--	--	--	93.42	--	--	--	--	--	--	--	93
Chisel	--	--	--	--	--	--	--	--	--	--	--	--
Plow	50.00	104.00	--	18.00	54.00	142.50	--	--	--	--	--	368
Disc harrow	125.00	260.00	--	54.00	88.56	218.88	--	--	--	--	--	746
Harrow (spike)	75.00	156.00	--	27.00	34.56	76.38	--	--	--	--	--	369
Roller	58.00	120.64	--	18.00	54.00	151.62	--	--	--	--	--	402
Float	58.00	120.64	--	18.00	54.00	151.62	--	--	--	--	--	402
Cultivator (4 bed)	167.50	348.40	--	90.00	270.00	456.00	--	--	--	--	--	1,332
Potato planter (2 row)	--	--	--	--	--	--	--	--	--	--	--	--
Vegetable planter and shaper (2 bed)	33.00	68.64	--	23.94	54.00	133.38	--	--	--	--	--	313
Beet and bean planter (4 row)	--	--	--	--	--	--	--	--	--	--	--	--
Broadcaster	--	--	--	--	44.82	--	--	--	--	--	--	45
Fertilizer distributor (4 row)	25.00	52.00	--	--	--	151.62	--	--	--	--	--	229
Duster (4 row)	--	--	--	--	--	228.00	--	--	--	--	--	228
Sprayer (4 row)	--	--	--	10.44	--	--	--	--	--	--	--	10
Cauliflower marker	--	--	--	--	--	57.00	--	--	--	--	--	57
Cauliflower cart	--	--	--	--	--	792.30	--	--	--	--	--	792

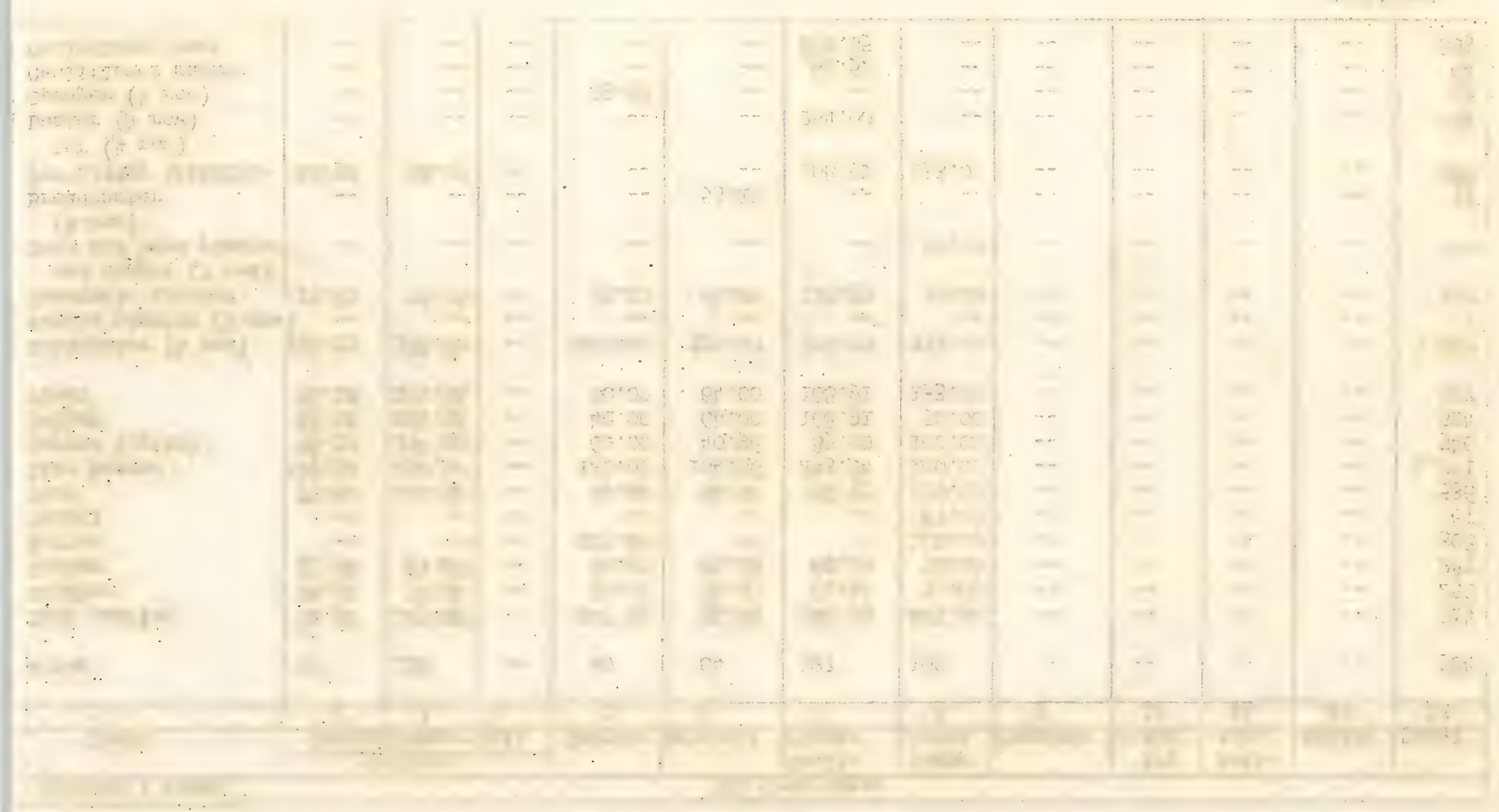
Continued -

| | | |

Appendix Table 4 - Continued

Subarea I Farms	500 Crop acres											
Items	Lettuce			Carrots	Broccoli	Cauli-flower	Sugar beets	Tomatoes	Dry beans	Pota-toes	Barley	Total
	Spring	Summer	Fall									
1	2	3	4	5	6	7	8	9	10	11	12	13
Acres	57	116	--	40	64	127	100	--	--	--	--	504
Tool carrier	61.56	125.28	--	247.60	55.68	148.59	425.00	--	--	--	--	914
Ditcher	28.50	58.00	--	20.00	32.00	63.50	50.00	--	--	--	--	252
Lister	33.06	67.28	--	20.00	23.68	85.09	58.00	--	--	--	--	287
Lifter	--	--	--	207.60	--	--	100.00	--	--	--	--	308
Chisel	--	--	--	--	--	--	67.00	--	--	--	--	67
Plow	57.00	116.00	--	40.00	64.00	158.75	100.00	--	--	--	--	536
Disc harrow	142.50	290.00	--	120.00	104.96	243.84	100.00	--	--	--	--	1,001
Harrow (spike)	85.50	174.00	--	60.00	40.96	85.09	100.00	--	--	--	--	546
Roller	66.12	134.56	--	40.00	64.00	168.91	50.00	--	--	--	--	524
Float	66.12	134.56	--	40.00	64.00	168.91	133.00	--	--	--	--	607
Cultivator (4 bed)	190.95	388.60	--	200.00	320.00	508.00	334.00	--	--	--	--	1,942
Potato planter (2 row)	--	--	--	--	--	--	--	--	--	--	--	--
Vegetable planter and shaper (2 bed)	37.62	76.56	--	53.20	64.00	148.59	30.00	--	--	--	--	410
Beet and bean planter (4 row)	--	--	--	--	--	--	80.00	--	--	--	--	80
Broadcaster	--	--	--	--	53.12	--	--	--	--	--	--	53
Fertilizer distributor (4 row)	28.50	58.00	--	--	--	168.91	133.00	--	--	--	--	388
Duster (4 row)	--	--	--	--	--	254.00	--	--	--	--	--	254
Sprayer (4 row)	--	--	--	23.20	--	--	--	--	--	--	--	23
Cauliflower marker	--	--	--	--	--	63.50	--	--	--	--	--	64
Cauliflower cart	--	--	--	--	--	882.65	--	--	--	--	--	883

Continued -



Appendix Table 4 - Continued

Subarea II Farms	150 Crop acres											
Items	Lettuce			Carrots	Broccoli	Cauli-flower	Sugar beets	Tomatoes	Dry beans	Pota-toes	Barley	Total
	Spring	Summer	Fall									
1	2	3	4	5	6	7	8	9	10	11	12	13
Acres	25	25	--	--	16	16	--	--	23	47	--	152
Tool carrier	27.00	27.00	--	--	13.92	18.72	--	--	24.84	111.86	--	223
Bean cutter	--	--	--	--	--	--	--	--	16.10	11.75	--	28
Ditcher	12.50	12.50	--	--	8.00	8.00	--	--	11.50	23.50	--	76
Lister	14.50	14.50	--	--	5.92	10.72	--	--	13.34	50.76	--	110
Chisel	--	--	--	--	--	--	--	--	--	37.60	--	38
Plow	25.00	25.00	--	--	16.00	20.00	--	--	--	47.00	--	133
Disc harrow	62.50	62.50	--	--	26.24	30.72	--	--	23.00	42.30	--	247
Harrow (spike)	37.50	37.50	--	--	10.24	10.72	--	--	--	--	--	96
Roller	29.00	29.00	--	--	16.00	21.28	--	--	--	11.75	--	107
Float	29.00	29.00	--	--	16.00	21.28	--	--	--	14.57	--	110
Cultivator (4 bed)	83.75	83.75	--	--	80.00	64.00	--	--	55.20	23.50	--	390
Potato planter (2 row)	--	--	--	--	--	--	--	--	--	18.80	--	19
Vegetable planter and shaper (2 bed)	16.50	16.50	--	--	16.00	18.72	--	--	6.90	--	--	75
Beet and bean planter (4 row)	--	--	--	--	--	--	--	--	11.50	--	--	12
Broadcaster	--	--	--	--	13.28	--	--	--	--	--	--	13
Fertilizer distributor (4 row)	12.50	12.50	--	--	--	21.28	--	--	--	35.25	--	82
Duster (4 row)	--	--	--	--	--	32.00	--	--	--	--	--	32
Cauliflower marker	--	--	--	--	--	8.00	--	--	--	--	--	8
Cauliflower cart	--	--	--	--	--	89.60	--	--	--	--	--	90
Potato digger	--	--	--	--	--	--	--	--	--	32.90	--	33
Rake (side delivery)	--	--	--	--	--	--	--	--	13.80	--	--	14

Continued -

Appendix Table 4 - Continued

Subarea II Farms	240 Crop acres											
Items	Lettuce			Carrots	Broccoli	Cauli-flower	Sugar beets	Tomatoes	Dry beans	Pota-toes	Barley	Total
	Spring	Summer	Fall									
1	2	3	4	5	6	7	8	9	10	11	12	13
Acres	14	10	--	--	38	70	--	--	45	63	--	240
Tool carrier	15.12	10.80	--	--	33.06	81.90	--	--	48.60	149.94	--	339
Bean cutter	--	--	--	--	--	--	--	--	31.50	15.75	--	47
Ditcher	7.00	5.00	--	--	19.00	35.00	--	--	22.50	31.50	--	120
Lister	8.12	5.80	--	--	14.06	46.90	--	--	26.10	68.04	--	169
Chisel	--	--	--	--	--	--	--	--	--	50.40	--	50
Plow	14.00	10.00	--	--	38.00	87.50	--	--	--	63.00	--	212
Disc harrow	35.00	25.00	--	--	62.32	134.40	--	--	45.00	56.70	--	358
Harrow (spike)	21.00	15.00	--	--	24.32	46.90	--	--	--	--	--	107
Roller	16.24	11.60	--	--	38.00	93.10	--	--	--	15.75	--	175
Float	16.24	11.60	--	--	38.00	93.10	--	--	--	19.53	--	178
Cultivator (4 bed)	46.90	33.50	--	--	190.00	280.00	--	--	108.00	31.50	--	690
Potato planter (2 row)	--	--	--	--	--	--	--	--	--	25.20	--	25
Vegetable planter and shaper (2 bed)	9.24	6.60	--	--	38.00	81.90	--	--	13.50	--	--	149
Beet and bean planter (4 row)	--	--	--	--	--	--	--	--	22.50	--	--	22
Broadcaster	--	--	--	--	31.54	--	--	--	--	--	--	32
Fertilizer distributor (4 row)	7.00	5.00	--	--	--	93.10	--	--	--	47.25	--	152
Duster (4 row)	--	--	--	--	--	140.00	--	--	--	--	--	140
Cauliflower marker	--	--	--	--	--	35.00	--	--	--	--	--	35
Cauliflower cart	--	--	--	--	--	392.00	--	--	--	--	--	392
Potato digger	--	--	--	--	--	--	--	--	--	44.10	--	44
Rake (side delivery)	--	--	--	--	--	--	--	--	27.00	--	--	27

Continued -

Appendix Table 4 - (continued)

Appendix Table 4 - Continued

Subarea II Farms	320 Crop acres											
Items	Lettuce			Carrots	Broccoli	Cauli-flower	Sugar beets	Tomatoes	Dry beans	Pota-toes	Barley	Total
	Spring	Summer	Fall									
1	2	3	4	5	6	7	8	9	10	11	12	13
Acres	28	44	25	17	28	47	--	--	132	--	23	344
Tool carrier	30.24	47.52	27.00	85.34	24.36	54.99	--	--	142.56	--	--	412
Bean cutter	--	--	--	--	--	--	--	--	92.40	--	--	92
Ditcher	14.00	22.00	12.50	8.50	14.00	23.50	--	--	66.00	--	--	160
Lister	16.24	25.52	14.50	8.50	10.36	31.49	--	--	76.56	--	--	183
Lifter	--	--	--	68.34	--	--	--	--	--	--	--	68
Plow	28.00	44.00	25.00	17.00	28.00	58.75	--	--	--	--	--	201
Disc harrow	70.00	110.00	62.50	51.00	45.92	90.24	--	--	132.00	--	46.00	608
Harrow (spike)	42.00	66.00	37.50	25.50	17.92	31.49	--	--	--	--	23.00	243
Roller	32.48	51.04	29.00	17.00	28.00	62.51	--	--	--	--	--	220
Float	32.48	51.04	29.00	17.00	28.00	62.51	--	--	--	--	11.50	232
Cultivator (4 bed)	93.80	147.40	83.75	85.00	140.00	188.00	--	--	316.80	--	--	1,055
Potato planter (2 row)	--	--	--	--	--	--	--	--	--	--	--	--
Vegetable planter and shaper (2 bed)	18.48	29.04	16.50	22.61	28.00	54.99	--	--	39.60	--	--	209
Beet and bean planter (4 row)	--	--	--	--	--	--	--	--	66.00	--	--	66
Broadcaster	--	--	--	--	23.24	--	--	--	--	--	11.50	35
Fertilizer distributor (4 row)	14.00	22.00	12.50	--	--	62.51	--	--	--	--	--	111
Duster (4 row)	--	--	--	--	--	94.00	--	--	--	--	--	94
Sprayer (4 row)	--	--	--	9.86	--	--	--	--	--	--	--	10
Cauliflower marker	--	--	--	--	--	23.50	--	--	--	--	--	24
Cauliflower cart	--	--	--	--	--	263.20	--	--	--	--	--	263
Rake (side delivery)	--	--	--	--	--	--	--	--	79.20	--	--	79

APPENDIX TABLE 5

Typical Overhead Costs and Operating Expenses for Irrigation Plants; Vegetable Farms in Subareas I and II, Santa Maria and Adjacent Truck Crop Areas, 1947-1949[a]

Item	Unit	220 crop acres Pumping plants: 900 G.P.M. Number or amount	900 G.P.M. Cost	1,125 G.P.M. Number or amount	1,125 G.P.M. Cost	All Specified items
1	2	3	4	5	6	7
			dollars		dollars	
Subarea I farms						
Annual use	acre feet	144	--	450	--	594
	hours	864	--	2,160	--	3,024
Number plants	plant	1	--	1	--	2
Overhead	dollar	1	594	1	649	1,243
Total overhead	dollar	1	594	1	649	1,243
Cost per acre foot	dollar	144	4.12	450	1.44	2.09
Pumping head	foot	115	--	115	--	115
Plant efficiency	per cent	59.2	--	59.2	--	59.2
Horsepower	HP	40	--	50	--	--
Demand	HP	40	201	--	--	201
	HP	--	--	50	225	225
Power	KWH	28,656	378	89,550	967	1,345
Total operating	dollar		579		1,192	1,771
Cost per acre foot	dollar	144	4.02	450	2.65	2.98
Total cost	dollar		1,173		1,841	3,014
Cost per acre foot	dollar	144	8.14	450	4.09	5.07
		340 crop acres				
		1,125 G.P.M.		1,125 G.P.M.		
Subarea I farms						
Annual use	acre feet	491	--	490	--	981
	hours	2,357	--	2,352	--	4,709
Number plants	plant	1	--	1	--	2
Overhead	dollar	1	649	1	649	1,298
Total overhead	dollar	1	649	1	649	1,298
Cost per acre foot	dollar	491	1.32	490	1.32	1.32
Pumping head	foot	115	--	115	--	115
Plant efficiency	percent	59.2	--	59.2	--	59.2
Horsepower	HP	50	--	50	--	--
Demand	HP	--	--	--	--	--
	HP	50	225	50	225	450
Power	KWH	97,709	1,036	97,510	1,034	2,070
Total operating	dollar		1,261		1,259	2,520
Cost per acre foot	dollar	491	2.57	490	2.57	2.57
Total cost	dollar		1,910		1,908	3,810
Cost per acre foot	dollar	491	3.89	490	3.89	3.87

Continued -

a/ See Table 8 for detailed annual overhead costs.

APPENDIX TABLE 3

Typical Overhead Costs and Operating Expenses 1.n Ex.Jamaica
Farms, Workshop Farms in Subareas I and II, Range Cattle
and Medium Truck Crop Areas, 19x-/-19x8

Item	Unit	Range cattle farms		Truck crop farms		
		Low	High	Low	High	Average
Cows per acre food	dollar	$91	2.86	$90	3.89	3.87
Total cost	dollar		1,285		1,209	3,640
Total operating	dollar					

1/ See Table 5 for detailed annual overhead costs.

(Continued -

Item	Unit	500 crop acres Pumping plants: 1,125 G.P.M. Number or amount	1,125 G.P.M. Cost	1,125 G.P.M. Number or amount	1,125 G.P.M. Cost	All specified items
1	2	3	4	5	6	7
			dollars		dollars	
Subarea I farms						
Annual use	acre feet	479	--	920	--	1,399
	hours	2,300	--	4,416	--	6,716
Number plants	plant	1	--	2	--	3
Overhead	dollar	1	649	2	649	--
Total overhead	dollar	1	649	2	1,298	1,947
Cost per acre foot	dollar	479	1.35	920	1.41	1.39
Pumping head	foot	115	--	115	--	115
Plant efficiency	percent	59.2	--	59.2	--	59.2
Horsepower	HP	50	--	50	--	--
Demand	HP	--	--	--	--	--
	HP	50	225	(2)50	450	675
Power	KWH	95,321	1,016	183,080	1,968	2,984
Total operating	dollar		1,241		2,418	3,659
Cost per acre foot	dollar	479	2.59	920	2.63	2.62
Total cost	dollar		1,890		3,716	5,606
Cost per acre foot	dollar		3.95		4.04	4.01
		150 crop acres: 720 G.P.M.				
Subarea II farms						
Annual use	acre feet	357	--			357
	hours	2,678	--			2,678
Number plants	plant	1	--			1
Overhead	dollar	1	531			531
Cost per acre foot	dollar	357	1.49			1.49
Pumping head	foot	88	--			88
Plant efficiency	percent	52	--			52
Horsepower	HP	30	--			--
Demand	HP	30	151			151
	HP	--	--			--
Power	KWH	61,865	658			658
Total operating	dollar		809			809
Cost per acre foot	dollar	357	2.27			2.27
Total cost	dollar	--	1,340			1,340
Cost per acre foot	dollar		3.75			3.75

Continued -

Appendix Table 3 - Continued

Item	Unit	240 crop acres Pumping plants				All specified items
		720 G.P.M.		900 G.P.M.		
		Number or amount	Cost	Number or amount	Cost	
1	2	3	4	5	6	7
			dollars		dollars	
Subarea II farms						
Annual use	acre feet	200	--	435	--	635
	hours	1,500	--	2,610	--	4,110
Number plants	plant	1	--	1	--	2
Overhead	dollar	1	531	1	594	1,125
Cost per acre foot	dollar	200	2.66	435	1.37	1.77
Pumping head	foot	88	--	88	--	88
Plant efficiency	percent	52	--	52	--	52
Horsepower	HP	30	--	40	--	--
Demand	HP	30	151	--	--	151
	HP	--	--	40	201	201
Power	KWH	34,658	435	75,381	825	1,260
Total operating	dollar		586		1,026	1,612
Cost per acre foot	dollar	200	2.93	435	2.36	2.54
Total cost	dollar		1,117		1,620	2,737
Cost per acre foot	dollar		5.58		3.72	4.31
		340 crop acres				
		900 G.P.M.		900 G.P.M.		
Subarea II farms						
Annual use	acre feet	200	--	454	--	654
	hours	1,200	--	2,722	--	3,922
Number plants	plant	1	--	1	--	2
Overhead	dollar	1	594	1	594	1,188
Cost per acre foot	dollar	200	2.97	454	1.31	1.82
Pumping head	foot	88	--	88	--	88
Plant efficiency	percent	52	--	52	--	52
Horsepower	HP	40	--	40	--	--
Demand	HP	--	--	--	--	--
	HP	40	201	40	201	402
Power	KWH	34,658	458	78,674	853	1,311
Total operating	dollar	200	659	454	1,054	1,713
Cost per acre foot	dollar		3.30		2.32	2.62
Total cost	dollar		1,253		1,648	2,901
Cost per acre foot	dollar		6.26		3.63	4.44

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APPENDIX TABLE 6

Typical Overhead Costs and Operating Expenses for Irrigation Plants; Vegetable Farms in Subareas I and II, Santa Maria and Adjacent Truck Crop Areas, 1950-1952

Item	Unit	220 crop acres Pumping plants				All specified items
		900 G.P.M.		1,125 G.P.M.		
		Number or amount	Cost	Number or amount	Cost	
1	2	3	4	5	6	7
			dollars		dollars	
Subarea I farms						
Annual use	acre feet	144	--	450	--	594
	hours	864	--	2,160	--	3,024
Number of plants	plant	1	--	1	--	2
Overhead[a]	dollar	--	662	--	725	--
Total overhead	dollar	--	662	--	725	1,387
Cost per acre foot	dollar	144	4.60	450	1.61	2.34
Pumping head	foot	115	--	115	--	115
Plant efficiency	percent	59.2	--	59.2	--	59.2
Horsepower	HP	40	--	50	--	--
Demand	40 HP	40	256	--	--	256
	50 HP	--	--	50	285	285
Power	KWH	28,656	401	89,550	986	1,387
Total operating	dollar		657		1,271	1,928
Cost per acre foot	dollar	144	4.56	450	2.82	3.25
Total cost	dollar		1,319		1,996	3,315
Cost per acre foot	dollar	144	9.16	450	4.44	5.58
		150 crop acres 720 G.P.M.				
Subarea II farms						
Annual use	acre feet	357	--	--	--	357
	hours	2,678	--	--	--	2,678
Number plants	plant	1	--	--	--	1
Overhead[a]	dollar	--	598	--	--	--
Total overhead	dollar	--	598	--	--	598
Cost per acre foot	dollar	357	1.68	--	--	1.68
Pumping head	foot	88	--	--	--	88
Plant efficiency	percent	52	--	--	--	52
Horsepower	HP	30	--	--	--	--
Demand	30 HP	30	192	--	--	192
	40 HP	--	--	--	--	--
Power	KWH	61,865	686	--	--	686
Total operating	dollar		878			878
Cost per acre foot	dollar	357	2.46			2.46
Total cost	dollar		1,476			1,476
Cost per acre foot	dollar	357	4.13			4.13

Continued -

a/ Includes overhead charges for well, pumping plant only.

Item	Unit	340 crop acres Pumping plants				All specified items
		1,125 G.P.M.		1,125 G.P.M.		
		Number or amount	Cost	Number or amount	Cost	
1	2	3	4	5	6	7
			dollars		dollars	
Subarea I farms						
Annual use	acre feet	491	--	490	--	981
	hours	2,357	--	2,352	--	4,709
Number of plants	plant	1	--	1	--	2
Overhead[a]	dollar	--	725	--	725	--
Total overhead	dollar	--	725	--	725	1,450
Cost per acre foot	dollar	491	1.48	--	1.45	1.48
Pumping head	foot	115	--	115	--	115
Plant efficiency	percent	59.2	--	59.2	--	59.2
Horsepower	HP	50	--	50	--	--
Demand	40 HP	--	--	--	--	--
	50 HP	50	285	50	285	570
Power	KWH	97,709	1,056	97,510	1,054	2,110
Total operating	dollar		1,341		1,339	2,680
Cost per acre foot	dollar	491	2.73	490	2.73	2.73
Total cost	dollar		2,066		2,064	4,130
Cost per acre foot	dollar	491	4.21	490	4.21	4.21
		240 crop acres				
		720 G.P.M.		900 G.P.M.		
Subarea II farms						
Annual use	acre feet	200	--	435	--	635
	hours	1,500	--	2,610	--	4,110
Number of plants	plant	1	--	1	--	2
Overhead[a]	dollar	--	598	--	662	--
Total overhead	dollar	--	598	--	662	1,260
Cost per acre foot	dollar	200	2.99	435	1.52	1.98
Pumping head	foot	88	--	88	--	88
Plant efficiency	percent	52	--	52	--	52
Horsepower	HP	30	--	40	--	--
Demand	30 HP	30	192	--	--	192
	40 HP	--	--	40	256	256
Power	KWH	34,658	460	75,381	860	1,320
Total operating	dollar		652		1,116	1,768
Cost per acre foot	dollar	200	3.26	435	2.56	2.78
Total cost	dollar		1,250		1,778	3,028
Cost per acre foot	dollar	200	6.25	435	4.09	4.77

Continued -

Appendix Table 6 - Continued

Item	Unit	500 crop acres Pumping plants: 1,125 G.P.M. Number or amount	1,125 G.P.M. Cost	1,125 G.P.M. Number or amount	1,125 G.P.M. Cost	All specified items
1	2	3	4	5	6	7
			dollars		dollars	
Subarea I farms						
Annual use	acre feet	479	--	920	--	1,399
	hours	2,300	--	4,416	--	6,716
Number of plants	plant	1	--	2	--	3
Overhead a/	dollar	--	725	--	725	--
Total overhead	dollar	--	725	--	1,450	2,175
Cost per acre foot	dollar	479	1.51	--	1.58	1.55
Pumping head	foot	115	--	115	--	115
Plant efficiency	percent	59.2	--	59.2	--	59.2
Horsepower	HP	50	--	50	--	--
Demand	40 HP	--	--	--	--	--
	50 HP	50	285	(2)50	570	855
Power	KWH	95,321	1,035	183,080	2,006	3,041
Total operating	dollar		1,320		2,576	3,896
Cost per acre foot	dollar	479	2.76	920	2.80	2.78
Total cost	dollar		2,045		4,026	6,071
Cost per acre foot	dollar	479	4.27	920	4.38	4.34
		320 crop acres				
		900 G.P.M.		900 G.P.M.		
Subarea II farms						
Annual use	acre feet	200	--	454	--	654
	hours	1,200	--	2,722	--	3,922
Number of plants	plant	1	--	1	--	2
Overhead a/	dollar	--	662	--	662	--
Total overhead	dollar	--	662	--	662	1,324
Cost per acre foot	dollar	200	3.31	454	1.46	2.02
Pumping head	foot	88	--	88	--	88
Plant efficiency	percent	52	--	52	--	52
Horsepower	HP	40	--	40	--	--
Demand	30 HP	--	--	--	--	--
	40 HP	40	256	40	256	512
Power	KWH	34,658	485	78,674	889	1,374
Total operating	dollar		741		1,145	1,886
Cost per acre foot	dollar	200	3.70	454	2.52	2.88
Total cost	dollar		1,403		1,807	3,210
Cost per acre foot	dollar	200	7.02	454	3.98	4.91

APPENDIX TABLE 7

Per Acre Inputs and Costs by Crops; 340 Crop Acre Farm in Subarea I, Santa Maria and Adjacent Truck Crop Areas, 1950-1952[a]

Item	Unit	Price or cost	Lettuce: Spring Number or amount	Lettuce: Spring Cost	Lettuce: Summer or fall Number or amount	Lettuce: Summer or fall Cost	Carrots[b] Number or amount	Carrots[b] Cost	Broccoli Number or amount	Broccoli Cost	Cauliflower[c] Number or amount	Cauliflower[c] Cost
1	2	3	4	5	6	7	8	9	10	11	12	13
		dollars		dollars		dollars		dollars		dollars		dollars
Ranch labor[d]				30.64		30.64		35.41		34.49		46.67
Contract services												
Production				29.38		29.38		17.38		25.12		11.28
Harvesting and marketing				91.56		116.63		300.24		151.32		164.54
Total contract services				120.94		146.01		317.62		176.44		175.82
Materials												
Production				41.92		41.92		52.70		49.20		54.51
Harvesting and marketing				113.40		144.45		250.89		126.36		205.68
Total materials				155.32		186.37		303.59		175.56		260.49
Miscellaneous												
Real Estate tax	acre		1	7.09	1	7.09	1	7.09	1	7.09	1	7.09
Real Estate investment[e]	acre		1	31.91	1	31.91	1	31.91	1	31.91	1	31.91
General overhead[f]				6.46		6.84		8.76		7.30		10.48
Labor overhead[g]				6.96		6.96		6.87		8.01		8.11
Total				52.42		52.80		54.63		54.31		57.59
Irrigation												
Concrete pipe				.10		.10		.10		.10		.10
Siphons				.34		.34		.34		.34		.34
Water	acre inch	.35	20	7.00	31	10.85	26	9.10	34	11.90	46	16.10
Total				7.44		11.29		9.54		12.34		16.54
Power												
TL-4 tractor	hour	2.10	5.7	11.97	5.7	11.97	6.0	12.60	4.5	9.45	5.7	11.97
W-2 tractor	hour	1.14	4.5	5.13	4.5	5.13	11.0	12.54	6.8	7.75	14.4	16.42
Pickup truck				2.73		2.73		2.73		2.73		2.73
1 1/2 ton truck				1.92		1.92		1.92		1.92		1.92
Total				21.75		21.75		29.79		21.85		33.04

(Continued on next page.)

Appendix Table 7 - Continued

Items	Unit	Price or cost	Lettuce Spring Number or amount	Lettuce Spring Cost	Lettuce Summer or Fall Number or amount	Lettuce Summer or Fall Cost	Carrots b/ Number or amount	Carrots b/ Cost	Broccoli Number or amount	Broccoli Cost	Cauliflower c/ Number or amount	Cauliflower c/ Cost
1	2	3	4	5	6	7	8	9	10	11	12	13
		dollars		dollars		dollars		dollars		dollars		dollars
Equipment												
Tool carrier	4-row	.64	1.08	.69	1.08	.69	10.21	6.53	.87	.56	1.17	.75
Ditcher	42 inch	.16	.50	.08	.50	.08	.50	.08	.50	.08	.50	.08
Lister	3-row	.18	.58	.10	.58	.10	.50	.09	.37	.07	.67	.12
Lifter	2-row	.27	--	--	--	--	5.19	1.40	--	--	--	--
Plow	4-14 inch	.36	1.00	.36	1.00	.36	1.00	.36	1.00	.36	1.25	.45
Disc harrow	10 1/2 foot	.76	2.50	1.90	2.50	1.90	3.00	2.28	1.64	1.25	1.92	1.46
Spike harrow	4-5 foot	.18	1.50	.27	1.50	.27	1.50	.27	.64	.12	.67	.12
Roller	10 foot	.17	1.16	.20	1.16	.20	1.00	.17	1.00	.17	1.33	.23
Float	10 foot	.03	1.16	.03	1.16	.03	1.00	.03	1.00	.03	1.33	.04
Cultivator	4-row	.23	3.35	.77	3.35	.77	5.00	1.15	5.00	1.15	4.00	.92
Vegetable planter shaper	2-bed	.35	.66	.23	.66	.23	1.33	.47	1.00	.35	1.17	.41
Fertilizer distributor	4-row	.29	.50	.14	.50	.14	--	--	--	--	1.33	.39
Duster	4-row	.74	--	--	--	--	--	--	--	--	2.00	1.48
Sprayer	4-row	--	--	--	--	--	.58	custom	--	--	--	--
Cauliflower marker		.12	--	--	--	--	--	--	--	--	.50	.06
Cauliflower cart		.30	--	--	--	--	--	--	--	--	6.95	2.08
Broadcaster bean	4-row	.22	--	--	--	--	--	--	.83	.18	--	--
Total				4.77		4.77		12.83		4.32		8.59
Production costs				188.32		192.55		212.28		201.63		228.22
Harvesting and marketing				204.96		261.08		551.13		277.68		370.22
Total costs				393.28		453.63		763.41		479.31		598.44
Acre/unit				2.34		2.12		2.75		3.07		1.38

a/ Based on following yields per acre for entries affected by yields; in crates spring lettuce 168, summer and fall lettuce 214, carrots 278, broccoli 156, cauliflower 433.
b/ Weeding done with oil.
c/ Direct field seeded.
d/ Cost of harvest labor included in per crate fee.
e/ Based on usual rent $50 per acre, less real estate taxes; corrected for double cropping.
f/ Calculated at 10% on total of labor, irrigation, power, and equipment.
g/ Calculated at 15% of ranch labor plus 10 cents per hour on pre-harvest contract labor.

Items	Unit	Cost	Amount	Cost	Cost + Cost							
		%	%		%							
		Labor	Supplies		General							
		Contract	Number of Units									
		Production										

APPENDIX TABLE 8

Per Acre Inputs and Costs by Crops; 500 Crop Acre Farm in Subarea I, Santa Maria and Adjacent Truck Crop Areas, 1950-1952 [a]/

Items	Unit	Price or cost	Lettuce Spring Number or amount	Lettuce Spring Cost	Lettuce Summer or Fall Number or amount	Lettuce Summer or Fall Cost	Carrots [b]/ Number or amount	Carrots [b]/ Cost	Broccoli Number or amount	Broccoli Cost	Cauliflower [c]/ Number or amount	Cauliflower [c]/ Cost
1	2	3	4	5	6	7	8	9	10	11	12	13
		dollars		dollars		dollars		dollars		dollars		dollars
Ranch labor [d]/		--	--	30.64	--	30.64	--	35.41	--	34.49	--	46.67
Contract services												
Production		--	--	29.38	--	29.38	--	17.38	--	25.12	--	11.28
Harvesting and marketing		--	--	91.56	--	116.63	--	300.24	--	151.32	--	164.54
Total contract services				120.94		146.01		317.62		176.44		175.82
Materials												
Production		--	--	41.92	--	41.92	--	52.70	--	49.20	--	54.51
Harvesting and marketing		--	--	113.40	--	144.45	--	250.89	--	126.36	--	205.68
Total materials				155.32		186.37		303.59		175.56		260.19
Miscellaneous												
Real Estate tax	acre	--	1	7.60	1	7.60	1	7.60	1	7.60	1	7.60
Real Estate investment [e]/	acre	--	1	34.19	1	34.19	1	34.19	1	34.19	1	34.19
Foreman	hour	1.35	5	6.75	5	6.75	5	6.75	5	6.75	5	6.75
General overhead [f]/		--	--	6.50	--	6.89	--	8.47	--	7.33	--	9.15
Labor overhead [g]/		--	--	6.96	--	6.96	--	6.87	--	8.01	--	8.11
Total				62.00		62.39		63.88		63.88		65.80
Irrigation												
Concrete pipe		--	--	.11	--	.11	--	.11	--	.11	--	.11
Siphons		--	--	.35	--	.35	--	.35	--	.35	--	.35
Water	acre inch	.36	20	7.20	31	11.16	26	9.36	34	12.24	46	16.56
Total				7.66		11.62		9.82		12.70		17.02
Power												
TL-4 tractor	hour	2.14	5.7	12.20	5.7	12.20	6.0	12.84	4.5	9.63	5.7	12.20
W-2 tractor	hour	1.09	4.5	4.90	4.5	4.90	11.0	11.99	6.8	7.41	14.4	15.70
Pickup truck		--	--	2.73	--	2.73	--	2.73	--	2.73	--	2.73
1 1/2 ton truck		--	--	1.92	--	1.92	--	1.92	--	1.92	--	1.92
Total				21.75		21.75		29.48		21.69		32.55

Continued -

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Appendix Table 8 - Continued

Items	Unit	Price or cost	Lettuce Spring Number or amount	Lettuce Spring Cost	Lettuce Summer or Fall Number or amount	Lettuce Summer or Fall Cost	Carrots[b] Number or amount	Carrots[b] Cost	Broccoli Number or amount	Broccoli Cost	Cauliflower[c] Number or amount	Cauliflower[c] Cost
1	2	3	4	5	6	7	8	9	10	11	12	13
		dollars		dollars		dollars		dollars		dollars		dollars
Equipment												
Tool carrier	4-row	.42	1.08	.45	1.08	.45	10.21	4.29	.87	.37	1.17	.49
Ditcher	42 inch	.11	.50	.06	.50	.06	.50	.06	.50	.06	.50	.06
Lister	3-row	.25	.58	.14	.58	.14	.50	.12	.37	.09	.67	.17
Lifter	2-row	.08	--	--	--	--	5.19	.42	--	--	--	--
Chisel	3-row	.61	--	--	--	--	--	--	--	--	--	--
Plow	4-14 inch	.49	1.00	.49	1.00	.49	1.00	.49	1.00	.49	1.25	.61
Disc harrow	10 1/2 foot	.85	2.50	2.12	2.50	2.12	3.00	2.55	1.64	1.39	1.92	1.63
Spike harrow	4-5 foot	.12	1.50	.18	1.50	.18	1.50	.18	.64	.08	.67	.08
Roller	10 foot	.26	1.16	.30	1.16	.30	1.00	.26	1.00	.26	1.33	.35
Float	10 foot	.04	1.16	.05	1.16	.05	1.00	.04	1.00	.04	1.33	.05
Cultivator	4-row	.24	3.35	.80	3.35	.80	5.00	1.20	5.00	1.20	4.00	.96
Vegetable planter, shaper	2-bed	.27	.66	.18	.66	.18	1.33	.36	1.00	.27	1.17	.32
Beet and Bean, planter	4-row	1.29	--	--	--	--	--	--	--	--	--	--
Fertilizer distributor	4-row	.34	.50	.17	.50	.17	--	--	--	--	1.33	.45
Duster	4-row	.66	--	--	--	--	--	--	--	--	2.00	1.32
Sprayer	4-row	--	--	--	--	--	.58	custom	--	--	--	--
Cauliflower marker		.22	--	--	--	--	--	--	--	--	.50	.11
Cauliflower cart		.40	--	--	--	--	--	--	--	--	6.95	2.78
Broadcaster, bean	4-row	.19	--	--	--	--	--	--	.83	.16	--	--
Total				4.94		4.94		9.97		4.41		9.38
Production costs				198.29		202.64		218.64		211.49		237.21
Harvesting and marketing				204.96		261.08		551.13		277.68		370.22
Total costs				403.25		463.72		769.77		489.17		607.43
Acre/unit				2.40		2.17		2.77		3.14		1.40

Continued -

Appendix Table 8 - Continued

a/ Based on following yields per acre for entries affected by yields; in crates spring lettuce 168, summer and fall lettuce 214, carrots 278, broccoli 156, cauliflower 433.

b/ Weeding done with oil.

c/ Direct field seeded.

d/ Cost of harvest labor included in per crate fee.

e/ Based on usual rent $50 per acre, less real estate taxes; corrected for double cropping.

f/ Calculated at 10% on total of labor, irrigation, power, and equipment.

g/ Calculated at 15% of ranch labor plus 10 cents per hour on pre-harvest contract labor.

APPENDIX TABLE 9

Per Acre Inputs and Costs by Crops; 150 Crop Acre Farm in Subarea II, Santa Maria and Adjacent Truck Crop Areas, 1950-1952[a]

Items	Unit	Price or cost	Lettuce Spring Number or amount	Lettuce Spring Cost	Lettuce Summer or Fall Number or amount	Lettuce Summer or Fall Cost	Broccoli Number or amount	Broccoli Cost	Cauliflower[b] Number or amount	Cauliflower[b] Cost
1	2	3	4	5	6	7	8	9	10	11
		dollars		dollars		dollars		dollars		dollars
Ranch labor[c]		--	--	30.64	--	30.64	--	34.49	--	46.67
Contract services										
Production		--	--	29.38	--	29.38	--	25.12	--	11.28
Harvesting and marketing		--	--	81.20	--	104.64	--	130.95	--	121.60
Total contract services				110.58		134.02		156.07		132.88
Materials										
Production		--	--	41.92	--	41.92	--	49.20	--	54.51
Harvesting and marketing		--	--	100.58	--	129.60	--	109.34	--	152.00
Total materials				142.50		171.52		158.54		206.51
Miscellaneous										
Real Estate tax	acre	--	1	6.16	1	6.16	1	6.16	1	6.16
Real Estate investment[d]	acre	--	1	26.39	1	26.39	1	26.39	1	26.39
General overhead[e]		--	--	7.56	--	7.94	--	8.18	--	13.66
Labor overhead[f]		--	--	6.96	--	6.96	--	8.01	--	8.11
Total				47.07		47.45		48.74		54.32
Irrigation										
Concrete pipe		--	--	.09	--	.09	--	.09	--	.09
Siphons		--	--	.65	--	.65	--	.65	--	.65
Water	acre inch	.34	20	6.80	31	10.54	24	8.16	46	15.64
Total				7.54		11.28		8.90		16.38
Power										
TL-4 tractor	hour	2.60	5.7	14.82	5.7	14.82	4.5	11.70	5.7	14.82
W-2 tractor	hour	2.00	4.5	9.00	4.5	9.00	6.8	13.60	13.0	26.00
Pickup truck		--	--	2.90	--	2.90	--	2.90	--	2.90
1 1/2 ton truck		--	--	1.96	--	1.96	--	1.96	--	1.96
Total				28.68		28.68		30.16		45.68

Continued

Appendix Table 9 - Continued

Items	Unit	Price or cost	Lettuce Spring Number or amount	Lettuce Spring Cost	Lettuce Summer or Fall Number or amount	Lettuce Summer or Fall Cost	Broccoli Number or amount	Broccoli Cost	Cauliflower[b] Number or amount	Cauliflower[b] Cost
1	2	3	4	5	6	7	8	9	10	11
		dollars		dollars		dollars		dollars		dollars
Equipment										
Tool carrier	4-row	.87	1.08	.94	1.08	.94	.87	.76	1.17	1.02
Bean cutter		.79	—	--	--	--	--	--	--	--
Ditcher	42-inch	.37	.50	.18	.50	.18	.50	.18	.50	.18
Lister	3-row	.33	.58	.19	.58	.19	.37	.12	.67	.22
Chisel		1.08	--	--	--	--	--	--	--	--
Plow	4-14 inch	.99	1.00	.99	1.00	.99	1.00	.99	1.25	1.24
Disc harrow	10 1/2 foot	1.14	2.50	2.85	2.50	2.85	1.64	1.87	1.92	2.19
Spike harrow	4-5 foot	.34	1.50	.51	1.50	.51	.64	.22	.67	.23
Roller	10 foot	.64	1.16	.74	1.16	.74	1.00	.64	1.33	.85
Float	10 foot	.11	1.16	.13	1.16	.13	1.00	.11	1.33	.15
Cultivator	4-row	.40	3.35	1.34	3.35	1.34	5.00	2.00	4.00	1.60
Vegetable planter, shaper	2-bed	.73	.66	.48	.66	.48	1.00	.73	1.17	.85
Fertilizer distributor	4-row	.80	.50	.40	.50	.40	--	--	1.33	1.06
Duster	4-row	5.25	--	--	--	--	--	--	2.00	10.50
Cauliflower marker		.88	--	--	--	--	--	--	.50	.44
Cauliflower cart		1.31	--	--	--	--	--	--	5.60	7.34
Broadcaster bean	4-row	.77	--	--	--	--	.83	.64	--	--
Total				8.75		8.75		8.26		27.87
Production costs				193.98		198.10		204.87		256.71
Harvesting and marketing costs				181.78		234.24		240.29		273.60
Total Costs				375.76		432.34		445.16		530.31
Acre/Unit				2.52		2.25		3.30		1.66

a/ Based on following yields per acre for entries affected by yields; in crates spring lettuce 149, summer or fall lettuce 192, broccoli 135, cauliflower 320.
b/ Direct field seeded.
c/ Cost of harvest labor included in per crate fee.
d/ Based on usual rent $50 per acre, less real estate taxes; corrected for double cropping.
e/ Calculated at 10% on total of labor, irrigation, power, and equipment.
f/ Calculated at 15% of ranch labor plus 10 cents per hour on preharvest labor.

APPENDIX TABLE 10

Per Acre Inputs and Costs by Crops; 320 Crop Acre Farm in Subarea II, Santa Maria and Adjacent Truck Crop Areas, 1950-1952[a]

Items	Unit	Price or cost	Lettuce Spring Number or amount	Lettuce Spring Cost	Lettuce Summer or Fall Number or amount	Lettuce Summer or Fall Cost	Carrots[b] Number or amount	Carrots[b] Cost	Broccoli Number or amount	Broccoli Cost	Cauliflower[c] Number or amount	Cauliflower[c] Cost
1	2	3	4	5	6	7	8	9	10	11	12	13
		dollars		dollars		dollars		dollars		dollars		dollars
Ranch labor[d]		--	--	30.64	--	30.64	--	34.19	--	34.49	--	46.67
Contract services												
Production		--	--	29.38	--	29.38	--	17.38	--	25.12	--	11.28
Harvesting and marketing		--	--	81.20	--	104.64	--	216.00	--	130.95	--	121.60
Total contract services				110.58		134.02		233.38		156.07		132.88
Materials												
Production		--	--	41.92	--	41.92	--	52.70	--	49.20	--	54.51
Harvesting and marketing		--	--	100.58	--	129.60	--	180.50	--	109.34	--	152.00
Total materials				142.50		171.52		233.20		158.54		206.51
Miscellaneous												
Real Estate tax	acre	--	1	8.34	1	8.34	1	8.34	1	8.34	1	8.34
Real Estate investment[e]	acre	--	1	35.76	1	35.76	1	35.76	1	35.76	1	35.76
General overhead[f]		--	--	7.17	--	7.64	--	9.44	--	8.12	--	11.99
Labor overhead[g]		--	--	6.96	--	6.96	--	6.69	--	8.01	--	8.11
Total				58.23		58.70		60.23		60.23		64.20
Irrigation												
Concrete pipe		--	--	.08	--	.08	--	.08	--	.08	--	.08
Siphons		--	--	.40	--	.40	--	.40	--	.40	--	.40
Water	acre inch	.42	20	8.40	31	13.02	26	10.92	34	14.28	46	19.32
Total				8.88		13.50		11.40		14.76		19.80
Power												
TL-4 tractor	hour	2.59	5.7	14.76	5.7	14.76	6.0	15.54	4.5	11.66	5.7	14.76
W-2 tractor	hour	1.38	4.5	6.21	4.5	6.21	9.7	13.39	6.8	9.38	13.0	17.94
Pickup truck		--	--	3.64	--	3.64	--	3.64	--	3.64	--	3.64
1 1/2 ton truck		--	--	2.38	--	2.38	--	2.38	--	2.38	--	2.38
Total				26.99		26.99		34.95		27.06		38.72

continued

Appendix Table 10 - Continued

Items	Unit	Price or cost	Lettuce Spring Number or amount	Lettuce Spring Cost	Lettuce Summer or Fall Number or amount	Lettuce Summer or Fall Cost	Carrots[b] Number or amount	Carrots[b] Cost	Broccoli Number or amount	Broccoli Cost	Cauliflower[c] Number or amount	Cauliflower[c] Cost
1	2	3	4	5	6	7	8	9	10	11	12	13
		dollars		dollars		dollars		dollars		dollars		dollars
Equipment												
Tool carrier	4-row	.71	1.08	.77	1.08	.77	10.21	7.25	.87	.62	1.17	.83
Bean cutter		.23	--	--	--	--	--	--	--	--	--	--
Ditcher	42 inch	.18	.50	.09	.50	.09	.50	.09	.50	.09	.50	.09
Lister	3-row	.20	.58	.12	.58	.12	.50	.10	.37	.07	.67	.13
Lifter	2-row	.37	--	--	--	--	4.02	1.49	--	--	--	--
Flow	4-14 foot	.66	1.00	.66	1.00	.66	1.00	.66	1.00	.66	1.25	.82
Disc harrow	10 1/2 foot	.46	2.50	1.15	2.50	1.15	3.00	1.38	1.64	.75	1.92	.88
Spike harrow	4-5 foot	.27	1.50	.40	1.50	.40	1.50	.40	.64	.17	.67	.18
Roller	10 foot	.31	1.16	.36	1.16	.36	1.00	.31	1.00	.31	1.33	.41
Float	10 foot	.05	1.16	.06	1.16	.06	1.00	.05	1.00	.05	1.33	.07
Cultivator	4-row	.29	3.35	.97	3.35	.97	5.00	1.45	5.00	1.45	4.00	1.16
Vegetable planter, shaper	2-bed	.53	.66	.35	.66	.35	1.33	.70	1.00	.53	1.17	.62
Fertilizer distributor	4-row	.59	.50	.30	.50	.30	--	--	--	--	1.33	.78
Duster	4-row	1.79	--	--	--	--	--	--	--	--	2.00	3.58
Sprayer	4-row	--	--	--	--	--	.58	custom	--	--	--	--
Cauliflower marker		.29	--	--	--	--	--	--	--	--	.50	.14
Cauliflower cart		.90	--	--	--	--	--	--	--	--	5.60	5.04
Broadcaster, bean	4-row	.29	--	--	--	--	--	--	.83	.24	--	--
Total				5.23		5.23		13.88		4.94		14.73
Production costs				201.27		206.36		224.73		215.80		249.91
Harvesting and marketing costs				181.78		234.24		396.50		240.29		273.60
Total costs				383.05		440.60		621.23		456.09		523.51
Acre/unit				2.57		2.29		3.11		3.38		1.64

a/ Based on following yields per acre for entries affected by yields; in crates spring lettuce 149, summer or fall lettuce 192, broccoli 135, cauliflower 320.
b/ Weeding done with oil.
c/ Direct field seeded.
d/ Cost of harvest labor included in per crate fee.
e/ Based on usual rent $50 per acre, less real estate taxes; corrected for double cropping.
f/ Calculated at 10% on total of labor, irrigation, power, and equipment.
g/ Calculated at 15% of ranch labor plus 10 cents per hour on preharvest contract labor.

Appendix Table 10 - Continued

Item	Unit	Price per unit	Inflation: Number to 1978	Inflation: Cost	Current: Number to 1978	Current: Cost	Projected: Number to 1978	Projected: Cost	Qualified[2]: Number to 1978	Qualified[2]: Cost
			1	2	3	4	5	6	7	8
		dollars		dollars		dollars		dollars		dollars
Apartments										
Central control	sq-ft	$.12	81,000	9,720	81,000	9,720	81,000	9,720	81,000	9,720
Open space	sq-ft	.08	12,000	960	12,000	960	12,000	960	12,000	960
Interior	sq-ft	.25	68,000	17,000	68,000	17,000	68,000	17,000	68,000	17,000
Walls	sq-ft	.30	210,000	63,000	210,000	63,000	210,000	63,000	210,000	63,000
Floor coverings	sq-yd	6.00	9,000	54,000	9,000	54,000	9,000	54,000	9,000	54,000
Ceiling	sq-ft	.20	81,000	16,200	81,000	16,200	81,000	16,200	81,000	16,200
Lighting	sq-ft	.15	81,000	12,150	81,000	12,150	81,000	12,150	81,000	12,150
Plumbing	sq-ft	.10	81,000	8,100	81,000	8,100	81,000	8,100	81,000	8,100
Heating	sq-ft	.12	81,000	9,720	81,000	9,720	81,000	9,720	81,000	9,720
Air conditioning	sq-ft	.15	81,000	12,150	81,000	12,150	81,000	12,150	81,000	12,150
Kitchen	sq-ft	.20	12,000	2,400	12,000	2,400	12,000	2,400	12,000	2,400
Bathroom	sq-ft	.20	6,000	1,200	6,000	1,200	6,000	1,200	6,000	1,200
Bedroom	sq-ft	.15	63,000	9,450	63,000	9,450	63,000	9,450	63,000	9,450
Closets	sq-ft	.10	12,000	1,200	12,000	1,200	12,000	1,200	12,000	1,200
Furnishings										
Beds	each	150.00	1,000	150,000	1,000	150,000	1,000	150,000	1,000	150,000
Chairs	each	50.00	2,000	100,000	2,000	100,000	2,000	100,000	2,000	100,000
Tables	each	75.00	1,000	75,000	1,000	75,000	1,000	75,000	1,000	75,000
Desks	each	100.00	1,000	100,000	1,000	100,000	1,000	100,000	1,000	100,000
Dressers	each	75.00	1,000	75,000	1,000	75,000	1,000	75,000	1,000	75,000
Lamps	each	25.00	2,000	50,000	2,000	50,000	2,000	50,000	2,000	50,000
Miscellaneous										
Carpeting	sq-yd	12.00	9,000	108,000	9,000	108,000	9,000	108,000	9,000	108,000
Drapes	sq-yd	8.00	2,000	16,000	2,000	16,000	2,000	16,000	2,000	16,000
Mirrors	each	50.00	1,000	50,000	1,000	50,000	1,000	50,000	1,000	50,000
Paintings	each	100.00	1,000	100,000	1,000	100,000	1,000	100,000	1,000	100,000
Refrigerator, each	each	250.00	1,000	250,000	1,000	250,000	1,000	250,000	1,000	250,000
Subtotal				1,761,000		1,761,000		1,761,000		1,761,000
Refrigerator cost				176,100		176,100		176,100		176,100
Furnishings and refrigerator costs				1,937,100		1,937,100		1,937,100		1,937,100
Total costs				2,580,000		2,580,000		2,580,000		2,580,000
Rate/unit				32,250		32,250		32,250		32,250

a/ Based on telephone style pay scale for entries estimated by hotels in states other than Alaska, Hawaii or Puerto Rico, summer of 1978.

b/ Alaska, Hawaii, Puerto Rico, Canal Zone, Guam, Virgin Islands, Samoa.

c/ Meeting done with off.

d/ Direct field needed.

e/ Cost of private input included in per cent price.

f/ Based on rental rate $20 per acre, less rent equals fixed contracted tax dollar cost.

g/ Calculated at 10% on front of input, freight, power, and equipment.

h/ Calculated at 15% of rental input line 10 cents per room on hospitality complex input.